# PRINCIPLES OF REAL ESTATE APPRAISING

JOHN A. ZANGERLE

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# PRINCIPLES OF REAL ESTATE APPRAISING

SECOND EDITION

*By*
JOHN A. ZANGERLE

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# FOREWORD

So cordial a reception having been given to the first edition of "Principles of Real Estate Appraising," the author has been encouraged to greatly amplify and bring up to date in every detail this second edition of the same title. During the last three years the principles of real estate appraising have been given increased thought by students of value. Much data has been collated of recent years by different authorities giving experiences, costs, rents, etc., all of which are very helpful in scientific study.

Actually this constitutes a fourth edition. The first edition was published in 1917, and was reprinted in 1920, some 25,000 copies having been distributed. In 1921 a field size, considerably revised, was placed upon the market, but it was not until May, 1924, that the present ambitious work was introduced to the public. This has been so rapidly absorbed that it now becomes necessary to publish another enlarged and revised edition.

Several new chapters have been added to this volume, while throughout the book an effort has been made to correlate and assemble in convenient form data referring to specific forms of appraising. The author has treated at greater length the following subjects: Plottage Value, Effect of Auto Transportation, Store Rental Capitalization, Corner Lots, Rate of Capitalization, Rent in Relation to Gross Sales, Effect of Re-Appraisal Leases on Land Values, the Capitalization of 99-year Lease Rentals, Depreciation and Appreciation, an entire new chapter entitled "Sensing the Market" has also been included.

One of the new chapters which has been introduced is entitled "Unscientific Bond Issue Appraisals," in which attention is drawn to serious dangers besetting the issuing of bonds on properties the known value of which is debatable.

Another valuable chapter has been added, entitled "Legal Decisions Regarding Appraisals." The author's long service as an attorney has convinced him that there is a definite need for setting forth a few of the many legal decisions establishing the principles underlying the appraisal of real estate, without which no realtor or appraiser is fully equipped as an expert. Important decisions are presented touching on such questions as What is Value? What is Evidence of Value? What are the Factors of Value? What is Market Value? Does Income Fix Value? When is Cost a Relative Factor?, etc. A comprehensive chapter covers this entire subject.

In connection with the department devoted to building appraisals, it will be noted that all cost data has been brought up to the midsummer of 1927, so that an appraiser in attempting to value buildings may have the advantage of comparisons with former years. Several new types of structures have also been included, which will be useful to building appraisers. In connection with the presenting of this edition, the author's cordial thanks are extended to his assistant, Mr. John Warner, an architect who has worked untiringly in bringing all building appraisal data up to date, presenting it in a complete and attractive form.

It is the author's earnest desire to improve this volume to the end that all phases of land and building appraising may be fully covered. Readers are at liberty to present their problems in writing, and are requested to offer suggestions as to methods for improving the present volume, and presenting new appraising problems for consideration.

In offering this new edition, the undersigned gratefully acknowledges the many kind things which have been said concerning former editions of this book, and sincerely thanks those who have offered commendation or criticism.

JOHN A. ZANGERLE.

Cleveland, Ohio.

September 15, 1927.

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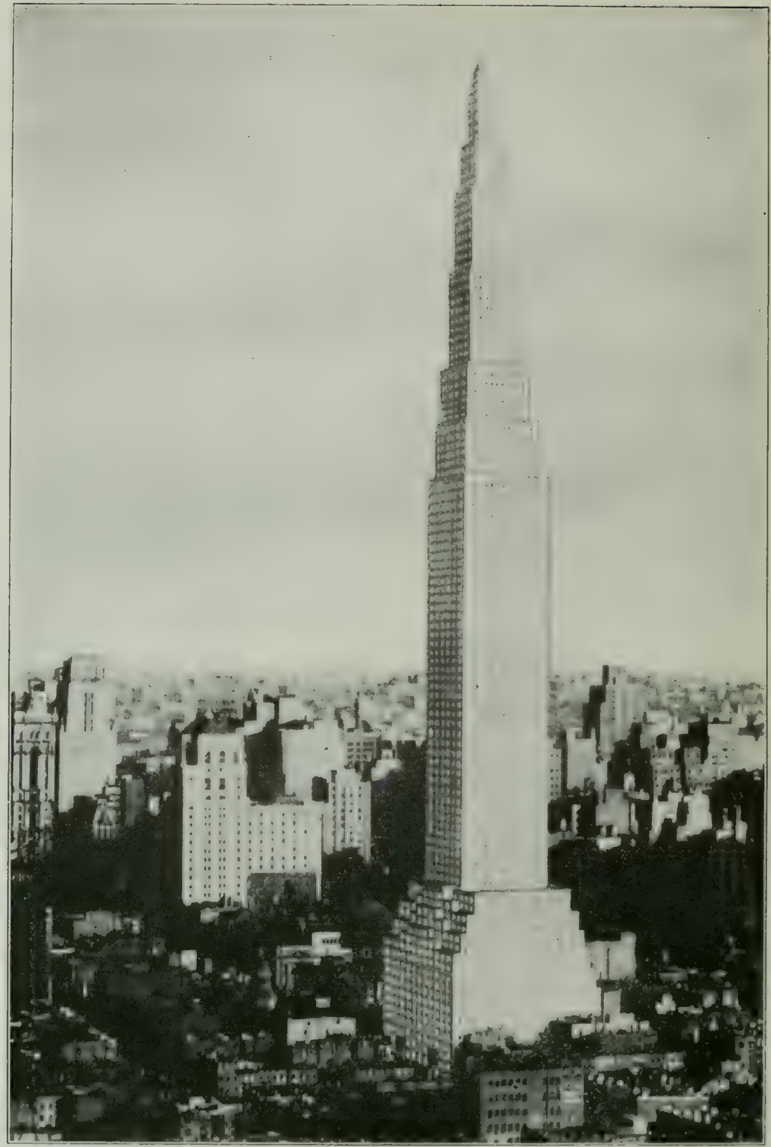


**TALL BUILDINGS BRING APPRAISING PROBLEMS**

Huge towering skyscrapers already built, or contemplated, present many puzzling problems to the appraiser. Above is shown a perspective of the proposed Larkin Tower Building in New York City, to be erected to a height of 110 stories. It will be 1208 feet high, or 226 feet higher than the Eiffel Tower in Paris, the altitude record holder for the past forty-six years. It will be 416 feet higher than the Woolworth Building, and 335 feet higher than the proposed Book Tower Building in Detroit, Michigan. The base portion will contain 18 stories, and the tower itself 90. There will also be 2 stories below the street level, making 110 stories in all. Special designs have been devised to prevent the tower from swaying in a high gale of wind.

# Principles of Real Estate Appraising

## CHAPTER 1

## SCIENTIFIC APPRAISING

Correct appraising responsible for stability of banks, manufacturing and mercantile institutions—Buyers of real estate must understand underlying principles—Investors vitally interested in values underlying securities—Real estate the basis on which two-thirds to three-fourths of country's revenues are raised—Scientific appraising greatly needed to replace haphazard systems.

With the development of the modern system of business, founded on a labyrinth of credit, which in the last analysis is pyramided on the value of the land and its improvements, the subject of correct and scientific valuations is annually assuming greater importance.

Banks enjoy a surplus or suffer a deficit, dependent largely on the accuracy of appraisals upon which loans are predicated. The value of the shares of manufacturing or mercantile institutions depends on the appraisal of fixed and permanent assets. Skyscrapers, factory buildings, warehouses, apartment houses and residences will show the owners a profit or a loss according to the method of appraisal employed. Adequacy or inadequacy of freight rates depends on the accuracy of data submitted by appraising authorities. Great insurance companies rely for their solidity on their investments in real estate or investments in stocks and bonds which are based in great part on real estate as the underlying security.

Many people owning no real estate and not being stockholders in any corporation think themselves landless and disinterested in the land tenure system. Who owns the banks if not the millions of depositors in the United States? And how much better is the deposit than a conservative estimate of the real estate underlying a bank's securities? Who owns the great insurance companies if not the millions of policy holders? And how much more valuable is an insurance company's obligations than the value of its assets, which such companies more and more are investing in real estate in order to secure and maintain public confidence?

Of far more direct importance is the need for buyers of real estate to understand some of the underlying principles of appraisal. In Cleveland and Cuyahoga County (Ohio) there are approximately 50,000 transfers of real estate annually. On this basis, it is possible that there are in the United States 5,000,000 purchasers and 5,000,000 sellers of real estate each year. There are approximately 50,000 mortgages filed in the same county, which would indicate that there are approximately 5,000,000 mortgages filed in the United States. Here, then, are millions of cases annually where purchases are made and where credit is extended based solely on appraisals of realty value.

Not only is each stockholder, each depositor and each real estate owner vitally interested from the standpoint of investment, but every person is interested in the proportion of real estate profits going to the United States Government. He or she is interested that the exactions shall not be too great, that they shall not be discriminatory. Every tenant is equally interested with his landlord as to whether the government appropriates too great a proportion of the rent paid in the way of income tax.

No field of investment has enjoyed more intensive activity during the last few years than that of real estate. The purchase of valuable properties is now seldom the act of individuals, but rather that of corporations, thus permitting a diversified ownership. Where mortgages of large amount a few years ago went to insurance companies and savings banks, today these mortgages run to trust companies and mortgage brokers of a large type as security for thousands of bonds of relatively small denomination. Property becomes more and more leased, on long term leases, the owner's fee is trusteed as security for land trust certificates of popular subscription, while the lessee's equity, generally after improvement of the premises, is trusteed as security for bonds of small denomination. Indeed, very recently a new form of investment, namely, leasehold trust certificates, has appeared, whereby the lessee's leasehold estate it trusteed for the benefit of the owners of trust certificates, thus permitting such investors to participate in any future increment in the value of the property.

This splitting of lessor's and lessee's estates, also frequently the sub-lessee's estate of a single parcel of land into many parts makes correct appraisal methods of increasing importance to thousands of investors, where in former times such concerned only a few.

It seems, then, that the appraisal of real estate is the keystone of the industrial, commercial and financial world. What is more fundamental then than more definite and scientific methods in a branch of knowledge hitherto woefully lacking in scientific and accurate study?

Real estate constitutes the base of from two-thirds to four-fifths of all local and state revenues in the United States. It constitutes directly and indirectly a very large part of the base under the federal inheritance, federal income and state inheritance taxes. The taxation of real estate is by all odds the most important feature of America's tax system, and yet the assessing of real estate has been given less consideration, is more bungled and perfunctorily administered than any other function of state. The elected assessor is generally regarded the least important officer on the ticket, the nominee—any cripple needing a job, the salary less than that of a common laborer, the position generally at the bottom of a partisan ticket—there to take pot-luck with the head of the ticket.

The taxpayer is, usually, little concerned with the equities of the tax burden or the administration thereof. He is primarily concerned with his own particular tax bill and not at all with the other fellow's assessment, totally oblivious of the fact that where any taxpayer is favored, the other taxpayer will probably enjoy the same or perhaps greater immunity, favor or discrimination, thus resulting in an increase in his own particular tax burden.

This unconcern of the taxpayer with the general problem permits assessing in a haphazard, hit and miss, guess method. The taxpayer, knowing of no system or of the employment of uniform methods, strikes out blindly against the assessor and seeks avoidance of his tax burden through under-assessments or abatements. Where no system is employed great opportunity for graft and corruption with little chance of detection is afforded and favoritism prevails. "Government by men and not by law" is instituted.

The steadily mounting tax rates and tax burden, however, is awakening taxpayers, landlords and tenants to the need for closer attention to this most vital function of government. Discriminating, inequitable assessments become doubly odious as the tax burden increases.

To secure results, there should *be substituted system instead of caprice, standards in place of guesses.* There should be instilled in the minds of taxpayers the fact that *real estate assessing involves a co-operative and civic duty* rather than the exercise of an autocratic function by the assessor, supported by large outlay of public funds as compensation to experts. In this way hundreds of thousands of dollars may be saved.

## CHAPTER 2

## WHAT IS VALUE?

Term has different meaning to different persons—The different kinds of values, and what they mean—Elements which go to make up value such as location, climate and topography—How ideas regarding the elements of value often conflict—A real definition of value.

To the layman value means exchange value. But the term value has different meanings to different persons. The assessor, the owner, the corporation, the accountant, all split hairs as to the concept of "value." So we find in full usage the terms full value, market value, fair market value, real value, cash value, full cash value, fair value, fair cash value, and true value. These terms are sometimes defined by the constitution or statutes of the state, sometimes fixed by custom or judicial interpretation so that in some states they have come to mean perhaps a 30, 40 or 50 per cent appraisal of the exchange value. The exact significance of these terms, whether they are designed to limit the full exchange value or intended to vouchsafe and guarantee a full exchange value assessment must be sought in the judicial interpretation of each state. In New York State the Surrogate's Court in Westchester County in the case of In Re Dupignac's Estate, Volume 204, N. Y. Supplement, Page 273, it was held that the terms "clear market value," "fair market value," and "cash value," as used in tax law, paragraph 220, subdivision 8, and sections 230 and 231, relating to transfer tax, were equivalent and synonymous terms; "cash value" means actual value, "market value" meaning the price which property will command in the market, and "clear market value" meaning open and honest market value.

Accountants differentiate book value from market value, particularly of shares of stock or bonds represented by balance sheet figures of corporations or other business concerns. Book value is that value of inventories and other assets carried on the books of the owning corporation. The market value of anything is a price fixed by purchases and sales in the market. Accountants speak of a "going concern" value, which means that the assets are worth a particular amount while the concern operates. A liquidation value is that value resulting from a discontinuance of the business of the company.

Realtors speak of real or economic value or intrinsic value as compared with speculative value. The real value of real estate is the money price which it will sell for in the open market in the particular locality. The economic value is that value resulting from a capitalization of the annual net income of property. It is important that the rent for which the premises might be leased is to be capitalized. The actual rental being paid may be too low. For example, the tenant may be paying under a lease executed 10 years ago when the scale of rents was much lower.

The phrase, economic value, is generally used with reference to improved real estate, as the economic value of vacant land cannot exactly or with any degree of certainty be segregated from the exchange value. The economic value of vacant property would involve speculation as to the cost of a building suitable to the site, securing a tenant on the usual terms, and then arriving at the net rent after deduction of the usual charges for investment, maintenance, repairs, depreciation, management, vacancies, etc. A capitalization of the net rent at a suitable rate would show the economic value of the vacant land. The "intrinsic" value is a term usually synonymous with "economic" value. Speculative value may be defined as the difference between the exchange and economic value.

Value, so far as this work is concerned, pertains to exchange value, that is, a price at which an owner is willing to sell who does not have to sell to a buyer who is willing to buy but who does not have to buy. The appraiser who appraises on records of sales and leases simply finds it impossible to separate speculative from exchange value, as values of real and, more so, of personal property contain some element of speculation. This is especially evident of late years in the stock and bond market, where within a period of a few months there is noted a reduction or addition of billions of dollars in aggregate valuation of stocks and bonds. It must be perfectly obvious that these values are largely speculative. The same thing holds true as to all intangible personal property values. For example, in the fall of 1920 inventories dropped billions of dollars as compared with early 1920 values. Any attempt to transmute exchange value into utility value, intrinsic value, real value or speculative value involves the study of philosophy and metaphysics in the realm of idealism and materialism. Especially in the subject of real estate will there be violent resentment by dealers or owners against theorizing the market into abstractions.

Some realtors and accountants fix different values as the basis for stock and bond issues, for purchase purposes, for cost accounting or income or general tax purposes. With these theories of a different valuation according to the color of the eye of a client one has little sympathy. These fifty-seven varieties of appraisal, to suit the purchaser or seller or bond or stock issuing corporation, etc., are not calculated to elevate the profession. Nothing more nauseates an owner than to discover different appraisals of the same real estate for different purposes by the same appraiser. By this practice realtors, assessors and accountants lose the confidence of the public and invalidate the credibility of their work.

Some appraisers attempt to differentiate between *true value* and *going concern value*. It is held that the value of industrial or other business property is different when used by a live, profitable concern. While *going concern value* is a proper subject for consideration, in the case of public utilities, where comparison with sales may not be available and where no market may be discovered and where value may be found in a capitalization of net earnings, in other cases, where the land and improvements may be duplicated, such *going concern value* is not a proper subject of inquiry. The value of an improved site can never be worth more than a capitalization of its present and potential earnings, limited only by the cost of buying a similar site and replacing the improvement. It can not exceed the latter, regardless of its use. (See Cedar Point Resort Co. v. Nuhn, Treas., 12 O. L. R. 449; also Long v. Paper Co., 900 O. S. 468.)

The stereotyped analysis of land value factors are climate, fertility, location and topography. It is suggested by one writer that there should be added other factors, such as energy, character, civic improvements and good roads, but he evidently had distinctly in mind farm land values. It will be noted that proximity to markets or transportation facilities, except through the concept of good roads, was not emphasized, although this is one of the greatest factors of value—making, remaking or breaking land values in cities and country. Other land value factors usually mentioned are parks, boulevards, cheap and good transportation, good schools, cheap telegraph and telephone systems, good hospitals, free libraries, well paved streets and more important—good, free drinking water and well-drained sewers.

One has little sympathy with any attempt to enumerate land value factors. They are too numerous to mention. Then, too, what creates value to one person destroys value to another. For example, the assessor of real estate early in his career learns

1. That a very wide street reduces values because pedestrians will not cross it. That a very narrow street reduces values.

2. That heavy pedestrian traffic without buying capacity is not a criterion—That a large traffic of credit-buying purchasers is not to be considered.

3. Income should be the basis for assessment (where the income is small)—That income should not be the basis (where the income is great), such as theatres, drug stores, restaurants, 5 & 10c stores, etc.

4. That property should be depreciated when a church is your neighbor—Where no church is nearby, property should be depreciated.

5. That property should be depreciated where there is a police or fire-engine station next door. When there is no police or fire-engine station nearby it should be depreciated.

6. A deep lot is worth no more than a shallow lot, that a shallow lot is worthless because it is not deep.

7. That property is worth less because it is restricted—That property is worth less if not restricted.

8. No banking facilities depreciate business property—Bank buildings, being dark and gloomy much of the day and night, depreciate neighboring property.

The Rhode Island Supreme Court was recently called upon to define what constitutes "value" under a long term lease of land wherein the lessee contracted to build a theatre and at the expiration of the lease the lessor was bound to purchase the building at a "value" to be fixed by appraisal. No particular kind of value was designated in the lease. The court in construing the case found what the party intended to get at was not the market value, nor the cost, but the sound value of the building on the basis of cost of reproduction less depreciation.

The courts have frequently been called upon to fix elements of real estate value in public utility rate fixing and control cases. Very seldom have courts been called upon to determine the elements of factors of *land value* only. These have to do, rather, with the value of land and improvement jointly.

The value of land may generally be found by comparison with the cost of securing or from sales of similar property in the neighborhood. When we come to the value of an improvement, however, we find cost of reproduction less depreciation has received substantial support by the courts as a fairly equitable standard, although this method has been subordinated by the courts to "market value" in rent control cases. (Hall Realty Co. v. Moos, 192 N. Y. 530, at 535 (1922); F. H. Smith Co. v. Verzi, 290 Fed. 338 (1923).)

However, in arriving at the fair "market value" the courts have admitted evidence bearing on almost every conceivable factor, including the cost of reproduction. They have admitted evidence bearing upon the following factors:

1. Investment.
    (a) Original cost and additions.
    (b) Purchase price.
2. Cost of reproduction.
3. Fee and rental value.
4. Assessed value.
5. Bona fide sales value of similar property in the vicinity.

6. Design and facilities of buildings.

7. Location with respect to purpose for which it was used. (See following cases: Karrick v. Cantrill, 277 Fed. 578 (1922); Forster v. Eliot, 282 Fed. 735; Hirsch v. Weiner, 190 N. Y. S. 111 (1921); Hall Realty Co. v. Moos, 192 N. Y. S. 530 (1922).)

The Karrick v. Cantrill case is of special importance in that the court admitted evidence and gave consideration to the cost of the building as bearing on the market value, although ordinarily such would not be the case. In that case, it was held that the cost might be considered equivalent to the market value because of the newness of the building.

After all is said and done as to the factors creating values, the value of land (omitting a metaphysical discussion) is merely the sum for which a piece of property will sell, the price it will bring in the open market to be paid by a willing buyer from a willing seller. Such selling price involves hundreds of factors. No attempt will be made to enumerate them. Three major factors, however, so greatly directly influence and control the selling value of land as to justify a brief examination of their offset. These are interest, taxes, and business conditions.

## INTEREST RATE A FACTOR OF VALUE

Perhaps no factor is so clear in affecting the value of lands as the interest rate of money. For example, if money for investment purposes in land is worth 4 per cent and if in the ordinary course of events and in the usual way of doing business $40.00 per annum can be made out of a piece of land, then it will be worth $1000. Formula: $40.00 is 4 per cent of what number? If the market rate of money is 6 per cent, then it would be worth $666.66. In another chapter the proper rate for capitalization purposes is given further consideration.

It will be asked what controls the rate of interest. This is fixed by the market rate of money in industry and finance. As the money rate in those fields goes up, mortgages will tend to follow the same rate and sooner or later values will follow the mortgage rate. The value of real estate tends ever towards a capitalization, at the existing market rate of money, of the profits that may be made out of the parcel. When business is good, the landlord may demand greater rental; then the advancing rental becomes capitalized by the high rate prevalent when business thrives. When in addition to existing or potential rents, the owner from past experience is reasonably certain that the site is going to increase in value, then an additional price is demanded and the buyer gladly pays something additional by way of speculation. So with farm property. For several decades farm values have increased in value. Hence farmers seek part of the prospective increase in values, even in case where profits are meager for the time being. Rarely do farmers sell on a capitalization of their economic rent.

The effect of the market rate of money is not immediately apparent because owners are not so immediately cognizant of the effect of the interest rate of money and therefore keep asking the same price for their property. It is also not so immediately evident because similar land in the same neighborhood is not sold in the open market sufficiently to give a market value to any particular piece of land. In other words, the movement of land values is a slow one—slower than that of commodities.

Still another reason is that much land is usually leased for a period of years, sometimes 5, 10 or 15 years. The owner during this tenancy gets a fixed rental irrespective of the state of industry and commerce, or of interest rate. He is therefore little concerned with temporary changes occurring during such tenancy. His fixed rentals allow of no increase or elasticity. To all intents and purposes as to him, the value is stationary.

When the property is adequately improved, when it is properly used and managed, the net rentals may be capitalized to secure the capital value of the property. Where the rights of lessor and lessee are definitely fixed for 99 years and the rental is definite, capitalization alone may be resorted to to arrive at the value of the lessor's estate. As to improved property suitably located and adequately used, it constitutes one of the best methods for checking up the appraiser's opinion.

But it is extremely important that the proper rate be used. For example, if a rental of $6000 per annum is used, a capitalization at 4 per cent would create a value of $150,000; at 5 per cent, $120,000; at 6 per cent, $100,000, and at 7 per cent, $85,714.

Mr. Richard M. Hurd states in his "Principles of City Land Values," 1913: "The rate of capitalization turning income into value, is based on the average interest rates of all investments and fluctuates with them, although within closer limits and more slowly."

"In general, the larger the city and the higher the class of property, the greater the stability of rents, and ease of convertibility and the lower the rate of capitalization."

"As capitalization rates vary with securities, Government bonds selling below a 2 per cent basis, railroad bonds and stocks on a 3½ to 5 per cent basis, so the rates of capitalization of urban rents vary from 4 per cent for the highest class of property in the largest cities, to 5 per cent and 6 per cent for second-class property in the same cities, or for first-class property in smaller cities, 7 per cent, 8 per cent and 10 per cent for tenements in the largest cities, and 12 per cent to 15 per cent for temporary utilization or disreputable purposes in the smaller cities." Unless these principles are firmly kept in mind many values from known leases with fixed rentals will appear debatable.

The rate to be employed depends from year to year on the market rate of money in the particular locality. For a number of years up to the signing of the armistice, money rates were stiffening. Leases were effected quite commonly fifteen years ago, when call money brought 2 per cent on a 4 per cent base in the larger cities. Rentals in long-time leases were negotiated at 4 per cent on the assumed value of the land, especially as to re-appraisal leases. Leases of New York land of the Astor estate provide a 5 per cent re-appraised rate. Gradually in conformity with the market rate of money and the profitableness of other investments, the rate stiffened until sometime in 1921, when rates began to soften. Municipal bonds, selling during the war on a 6 per cent basis are now frequently selling for 4½ per cent, while first-class railroad bonds have recently been floated at 4¾ per cent. U. S. Government bonds selling in the open market in 1920 to yield 6 and even 7 per cent are now selling to yield 4 per cent, or lower.

During the year 1922, the Terminal Building Company of Cleveland bought the fees of twenty or more properties from the owners, which fees were subject to long-time leases. The price paid for these properties showed that the average rental was capitalized on an average basis of 4.86 per cent. It should be borne in mind that this was during the year 1922, when interest rates were relatively low.

A number of railroads are leased to operating companies on long-time leases, in some cases for 999 years; in others during the lessee's charter. In these cases, the lessor companies leased all of their assets which represented only real estate. Stocks of lessor companies therefore represent parts of the ownership of the fee subject to long-term lease on a fixed annual rental. What these stocks sell for in the New York stock market ought therefore to reflect the rate of capitalization for long-term leases to secure the value of a lessor's estate. In 1918 ten of the leading stocks of this character were sold on an average basis of 6 per cent. These same stocks averaged about 5½ per cent in July, 1923, although stock in the best railroad companies sold on a 5 per cent basis.

The United States Department of Agriculture, Bureau of Agricultural Economics (1925), in a study as to the relative tax burden of farms and other property, capitalize net earnings of city and farm property at 6 per cent for the purpose of arriving at the capital value.

Not only does the rate of capitalization of rentals depend on the market rate of money, which is lower in the older European creditor nations, but it also depends on the location of the property. In the down-town section of a growing city, where land values are almost sure to increase, investors feel they take less risk and therefore are willing to take a lower rate. On the other hand, in outlying districts of such growing city, or in a stagnant city or in neighborhoods growing slowly or perhaps retrogressing or in smaller villages, a higher rate will be demanded. A number of leases have been effected in Cleveland on a 7 per cent basis of the valuation in outlying sections while property in the down-town district is leased on a lower basis, with government and high-grade railroad securities selling at a basis of about 4½ per cent. The market in the particular city for that particular locality must govern the rate of capitalization.

As stated before, the rate of capitalization is a local matter depending on local custom as well as the market rate of money. For instance, in Boston, down-town owners of realty are satisfied with a 4 per cent return; in Dallas, Houston, Oklahoma City and the Southwest 8 per cent; in St. Louis 5½ per cent; in Chicago 5 per cent; in Atlanta, Birmingham and the Southwest 5½ to 6 per cent; in St. Paul, Minneapolis and the Northwest 6 per cent.

For purposes of convenience and average, a rate of 6 per cent is herein uniformly used in the illustrations except where otherwise indicated.

In some states, as in Ohio, the law of appraisal of successions specifically provides for a rate of 5 per cent to be used in figuring any interest and estate. Section 5342 of the General Code of Ohio provides as follows:

> "The value of a future or limited estate, income, interest or annuity for any life or lives in being, or of any dower interest or **other estate or interest** upon which any estate or interest the succession to which is taxable under this chapter is limited, shall be determined by the rule, method and standard of mortality and value employed by the superintendent of insurance in ascertaining the value of annuities for the determination of liabilities of life insurance companies, **except that the rate of interest shall be five per centum per annum.**"

There is grave doubt whether this provision in Ohio and in states with similar provisions, does not foreclose any discretion in the use of a capitalizing rate in calculating capital values for inheritance tax purpose. Certain descriminations are evident in figuring dower and remainder estates on a 5 per cent basis and then capitalizing leasehold estates at another rate. For example, where the estate owns a leasehold enjoying a rental of $15,000, if this is capitalized at 6 per cent, it produces a value of $250,000. For distribution purposes, the capital value is arrived at by annuity tables based on a 5 per cent rental of this capital value, making $12,500, whereas the actual rental is $15,000, causing a loss to the state of $50,000 in assessment. In a very recent succession case, unreported, before the Probate Judge of Cuyahoga County, he expressed the opinion that leases should be capitalized at 5 per cent, which may therefore become the prevailing rate. Whatever may be the law in such cases, the capital value is fixed by the markets from time to time. No fixed predetermined rate will control.

On the other hand, it may be found that the legislature in some states has determined the rate of capitalization by statute for the purposes of taxation. For example, the legislature in the State of Ohio under Section 5330 G. C. has provided that public lands under lease for a term of years renewable forever shall be regarded for all purposes of taxation as the property of lessees and shall be assessed in their names. The legislature has further provided that:

> "In determining the value for purposes of taxation of such leasehold interest, the true value in money of the land shall be ascertained, the annual rent reserved in the lease shall be capitalized on a 6 per cent basis and that sum deducted from the true value of the land in money; the result so obtained plus the value of all improvements on such land shall be the appraised taxable value of such leasehold interest."

The statute therefore lends sanction to the use of a 6 per cent basis of capitalizing rentals.

In this connection, it is also interesting to note that the laws of Maryland now provide that leases for residential property for a longer term than fifteen years are redeemable after five years at the option of the lessee and without the consent of the lessor, the consideration being determined by capitalization of rent at a rate of 6 per cent.

The theory of capitalization is that a thing is worth what it will annually produce. To authorize such deductions of value it must be assumed, however, that the income is permanent. For example, the value of an oil or gas well may not be arrived at by capitalizing the income at any rate per cent. The flow is uncertain. If the flow were constant and for a definite period of time, it might be capitalized at such rate as would insure the return of the investment plus the market rate of money. Short term leases such as 20, 30, 40 or 50 years must be appraised on the present worth of an annuity. So, when long-time leases still have short periods to run, such as 20 to 50 years, they should be calculated as the present worth of an annuity for such period of time.

## CHAPTER 3

# LAND VALUES AFFECTED BY THE STATE OF BUSINESS AND BY TAXES

Labor and building costs affect values—How much of increased land values should be considered as profit?—How taxes affect capital value—A novel suggestion for regulating taxes Other factors of value—Plottage.

Condition of general business is the main factor of land value. When business is good, merchants enjoy prosperity. Merchants compete for sites, offer higher rentals and values move up. When business declines, some merchants fail and sites then compete with each other for tenants.

Nothing so directly affects values as the cost of building and cost of labor. When labor becomes less efficient, when prices of building material are forced up, these forces impose a tax or enjoy a mortgage, figuratively speaking, on land values. When buildings cost more money than usual, their construction is delayed, the tax charge on the vacant land continues and necessarily reduces the prospective profit on such land. Owners are therefore more inclined to seek buyers. On the other hand, when buildings cost less, owners desire to improve, hesitate to sell and land values go up.

There is a tendency for land values to find a level with business values. There is a constant ebb and flow of funds from one form of investment to another, seeking the best and safest return. Land investments, business investments, investments in public and private bonds, preferred and common stocks, mortgages, credits, etc.—there is a constant flow from each investment to the other. A change of a fraction of a per cent profit is frequently enough to change an owner's investment, all elements such as safety, liquidity, marketability, immunity from taxes, rate of return being considered. Whatever affects any one of these fields of investment, affects all.

Some people assume because an occasional investment in land has proven profitable that all are profitable. This is no more true in land value investments than in other investments. If every investment therein were profitable, the business would be overdone. There are losses as well as gains resulting from speculation in land. It is this continual study of the prospective gains and losses in manufacturing, mining, transportation, financial, commercial and land investments within which there is a free and open market which may be said to stabilize profits as to each other. Each acts and reacts on the other. There can be no change of profit or loss as to one without sooner or later affecting the other.

Recently a careful study was made of the great increase of land values of Cuyahoga County, containing the City of Cleveland, together with several other adjacent cities, twenty villages and fifteen townships. The inquiry was as to what extent a buyer in 1911 at the assessed value of all the property in the county would have profited, assuming the land had not been used. The 1911 land values of Cuyahoga County were $340,985,580; the 1920 land values were $857,817,740, showing an increase of $516,832,160, or 15 per cent per annum. How much of the increase should be considered profit? To get at the real margin of profit, the carrying charges should be deducted from the gross increase. Assuming that money during the war decade could have been borrowed on unimproved land at 7 per cent and that compounded annually, then in 10 years interest charges thereon would have amounted to approximately $330,000,000. The general taxes with interest were approximately $96,500,000 and the special improvements with interest assessed against the land were approximately $36,500,000. The interest, taxes and special assessments, therefore, would aggregate $463,000,000, leaving a net profit of only $54,000,000 or less than 1.6 per cent per year. At first blush, the apparent 15 percent annual increase of land values over a period of years seems phenomenal, but when carrying charges are considered and the net profit proves to be but 1.6 per cent a year, the rainbow fades away.

To realize an abnormal profit on land, it is necessary to put the land to use and receive a rental. Vacant property, except under exceptional circumstances, may involve deficits as well as gains.

## EFFECT OF TAXES ON CAPITAL VALUE

The effect of a higher or lower capitalization rate in transmuting net income to capital value has been given some consideration. In addition to the capitalization rate, we must consider the effect of higher or lower taxes on such value. Every owner knows that the increase of taxes, all other things being equal, decreases net income and reduces thereby the capital value. And vice versa, the reduction of taxes increases net income and increases the capital value, all other things being equal.

The question frequently arising to an owner is—"How much will an increased tax rate affect a given parcel's value?" Assuming that a certain improved parcel brings in $750 annual rent for the use of the land and that the market rate of money for land investments is 5 per cent, that the owner pays the tax equivalent to $2.50 per $100 of assessment, that the property is assessed at 100 per cent, we have the query: What is the land worth? The formula would be $750 divided by 7.5 per cent (5 per cent investment and $2.50 tax rate) equals $10,000.

Let us assume that the tax rate is increased to 5 per cent, other conditions remaining the same. We have then the formula: $750 divided by 10 per cent, equals a valuation of $7500. In other words, an increase of tax rate from $2.50 per $100 valuation to $5.00 per $100 reduces the capital value from $10,000 to $7500. In case the tax rate were reduced, for example, to $1.50 per $100 valuation, we would have the formula of $750 divided by 6.5 per cent equals $11,538.

The foregoing assumes that the land is assessed at full value. Let it be assumed that the land is assessed at 50 per cent of its value, viz., $5000. This would involve a real tax rate of $1.25 per $100 real value where the tax rate is $2.50 per $100 assessed valuation. The formula then would be—$750 divided by 6.25 per cent (5 per cent interest and 1.25 per cent tax rate) equals $12,000. In the other case of an assumed tax rate of 5 per cent, if the property is assessed on a 50 per cent basis, we would have a formula of $750 divided by 7.5 per cent (5 per cent interest and 2.5 per cent "real" tax rate) equals a capital value of $10,000. It will thus be apparent that the capital value depends upon the market rate of money, on the tax rate, on the tax assessment and an assumption of the status quo as to economic conditions and the existing taxable status of all other forms of property.

It is frequently urged that a tax on personal property benefits land owners in general. Whether a spreading of the tax burden on a merchant's stock of merchandise will benefit his landlord is doubtful. As the merchant is required to pay more taxes on his personal property, he is less able to realize a profit and therefore the landlord may secure less. Hence the land becomes worth less, by the imposition of personal property taxes on the merchant or manufacturer. It is equally true if the entire tax is laid on the land that it becomes worth less, all other things being equal. All of which seems to indicate that a tax of any kind finally affects land values.

From the foregoing it is evident to what extent land values are now nationalized. With the tax rate nearly $3.00 per $100 of assessment as in New York City, with profits tending towards 6 per cent for the landlord, we would have the state a full one-third partner. That is to say, the state gets one-third and the owner two-thirds of the profits, except that the gains and losses incident to rising or falling of prices go to the landlord subject only to the national income tax on increments.

So long as the state taxes the capital value, regardless of tax rate, there will remain a capital value. For, as the capital value results from a capitalization of the profit remaining after deducting taxes, a capital value will always ensue unless the entire rent is taken.

Single taxers of California recently recognized that speculation would always ensue so long as the state would not absorb the entire rent. Hence they proposed an amendment to the state's constitution, not to tax land at a different rate from other property, but to tax the full annual rental of land and to exempt all other forms of property.

The effect of a tax on land values is so well known that it has frequently been used for social purposes. In Canadian cities at the present time, improvements are largely exempted in order to place a heavier burden on land values and a lighter one on buildings, thus penalizing the many absentee speculators who refuse to improve their property. Ohio in its early history did the same. In New Zealand a graded tax bearing most heavily on the larger landed estates and more heavily on non-residents than residents is still on the statute books. In New York and New Jersey very recently residential buildings of a certain value were exempted in order to stimulate the development of such structures. The city of Toronto on January 1st, 1924, submitted to popular vote the question of exempting residences entirely from the improvement tax, which it now actually does as to residences of small value.

Real estate is usually taxed in the United States at a uniform rate, irrespective of its use, its quantity or value. A novel suggestion to tax real estate through a progressive tax rate was recently made. A schedule of rates was proposed to apply to land values only according to their worth per foot frontage of standard depth of 100 feet, lots of a different depth being valued more or less on a fixed and published standard. The rates were designed to stop speculation, to relieve the home, to tax the increment and to relieve falling property values. The proposed rates were as follows:

| Value per Front Foot | Rate per $100 |
|---|---|
| $ 25 or less | $1.40 |
| 25 to 50 | 1.45 |
| 50 to 100 | 1.50 |
| 100 to 250 | 1.55 |
| 250 to 500 | 1.60 |
| 500 to 1,000 | 1.65 |
| 1,000 to 2,000 | 1.70 |
| 2,000 to 3,000 | 1.75 |
| 3,000 to 4,000 | 1.80 |
| 4,000 to 5,000 | 1.85 |
| 5,000 to 6,000 | 1.90 |

| | |
|---|---|
| 6,000 to 7,000 | 1.95 |
| 7,000 to 8,000 | 2.00 |

The advantages claimed under such a scheme were briefly as follows:

(1) Under the proposed tax rate scheme, residential property is taxed at a lower rate than business property.

(2) The tax rate is elastic. As the value of property goes up, the tax rate increases. As it goes down, it decreases. If the tax rate is higher than the present

value of the property would justify, the tax rate will be decreased to maintain the equilibrium. If the value of the property grows faster than the tax rate, the rate increases concurrently with the resulting increased capitalization value. An increase of rate thereupon will tend to reduce its capitalization to its former amount.

(3) The present values are retained to the present owners. No so-called confiscation of values is threatened. On the other hand, no land would be held for a rise. All increase would be absorbed. Speculation would cease.

(4) The rates are based on the value per foot front for a unit foot and would involve no difficulty in administration.

(5) In absorbing the increment, it is far simpler than any increment tax thus far adopted. The sole criterion of the rate is the value and not, as in England or Germany, its use, which latter necessitates separate considerations of each individual parcel.

(6) It is more equitable than the Australian system which values property owned by residents and nonresidents at different rates, progressing with the value of the estate, irrespective of its size or location. In other words, a $25,000 farm would receive, under the Australian system, the same tax rate as three feet on a main business street in a big city of similar value.

(7) The many and complex exemptions of the English system, so difficult of administration, are eliminated.

(8) It eliminates consideration of the purchase price and the selling price and the intermediate profits of the land and building, so complicated in the German system and undoubtedly fruitful of perjury and virulent discussion.

(9) To those who appreciate that 50 per cent of the residential lots of the average city are not advancing in price, while sites enjoying advantages of location are growing often by leaps and bounds, the impropriety of a fixed and uniform tax rate must be self-evident. To charge a rate of $1.50 against lands depreciating in value while charging $1.50 against land values doubling and trebling annually in value, is wrong on the face of things. No community has any right to tax lands depreciating so long as other lands are appreciating. In the latter case, it is clear that the neighborhood advantages have grown faster than the tax rate, the residue only being capitalized and representing the site value.

## OTHER FACTORS OF VALUE

Residential property, fundamentally, is controlled by the same basic factors as to value, namely, potential rentals, rate of interest, taxes, and the like. In addition, however, there is the factor of social prestige. All persons like to imitate the rich, and desire to live near beautiful homes with well-kept lawns situated on shady streets, where exclusive and select families reside. By select is not meant the intellectuals, but the rich, the "showy" rich. Their elegant homes reflect value on less imposing residences. Residential property values are, then, somewhat a barometer of social standing, so far as outward show determines it. Of course, many other factors of value are involved in residential property, such as proximity to thoroughfares, boulevard and park facilities, transportation, etc.

Strictly residential property, not tending towards the commercial, shows no great variation in price in large cities, as is indicated by the following replies to a questionnaire submitted recently to real estate boards of the respective cities:

**Highest Residential Values in Leading Cities**

| City | Values Per Ft. |
|---|---|
| Toledo, Ohio | $309.00 |
| Pittsburgh, Pa | 260.00 |
| St. Paul, Minn | 173.90 |
| Omaha, Neb | 87.00 |
| St. Louis, Mo | 266.00 |
| Baltimore, Md | 173.90 |
| Minneapolis, Minn | 151.00 |
| Duluth, Minn | 88.40 |
| Seattle, Wash | 55.00 |
| San Francisco, Cal | 590.00 |
| Cleveland, Ohio | 250.00 |

These values are estimated on a standard 100 foot in depth basis. It is probable that the very high priced residential property above indicated has a double front such as on the lake, sea, or river, which factor should be given a separate value, thus reducing the value inhering in a single front residential lot and thus making for greater uniformity of value. San Francisco has a very few sites at the above price on the hills, commanding a marine view of the bay, and unrestricted view of the sunsets of the Golden Gate. Property across the street, however, is selling at $200 per foot.

Unimproved residential property of large cities will be found to range between $10 and $25 per foot front. Improved residential property will be found to range, as to nine-tenths thereof, between $25 and $75 per foot front, while three fourths of the latter will undoubtedly be less than $50. When improvements, such as sidewalk, curbing, paving, water, sewer, etc., are installed, there is a cost for raw land and improvements in most cities of $30 to $40 per foot front, which, indeed, is extremely low. Fully improved properties with present day costs may run to $50 per foot front, depending on grade, soil, width of street, character of improvements, proximity to the center of the city, street car transportation, exclusiveness of neighborhood and other civic and industrial advantages.

## GULLIES AND SUBMERGED LANDS

Where an assessor shows on outline maps unit values for standard lots and where adjacent lands are of different grade because of an occasional gully or declivity or slope or adjoining hillside, such lots must be specially considered by field men, surveyors and realtors. The consideration before the appraiser is to determine what is a lot with such a gully, creek, or slope worth if standard lots on grade are worth a given price? The answer must be determined by the cost of making the lot utilizable for similar purposes as the adjacent land is put to.

The cost of filling a gully or submerged land will probably closely correspond to the cost of excavation and removal, although depressions in city neighborhoods suitable for blast furnaces or similar industries having to get rid of waste product command a premium for the dumping of refuse, which otherwise it would be necessary to cart away to distant points. Many far-sighted realtors have profited by leasing valleys and selling dumping rights, thus filling in the depression and later selling it as grade land.

Units on average streets are intended for lots of normal grade. Detail maps should show the courses of creeks and severity of grades and width of lot, which must then be given an added depreciation of a percentage based on such severity. Thus some lots must be depreciated 10, 20, 30 and even up to 90 per cent. These depressions are noted by surveyors and indicated on each sectional map and lot so that the exact topographical condition is immediately evident to the calculator and allowance made therefor.

## PLOTTAGE

In dealing with plottage value one treads on thin ice so far as the general assessor is concerned. For a board of revision or the realtor appraising all the minor factors of value it must be considered. A well known writer gives illustrations of plottage value as follows:

"A lot may be said to have plottage value when by reason of its size it is available for the highest utility of its zone. For instance, in the retail shopping district, a lot 30 by 150 feet deep would be worth more than twice the value of a lot 15 by 150 adjoining; because of its size, it is capable of an improvement which could fairly cover the whole of the lot and be utilized for any one of a number of retail business purposes; whereas it is doubtful whether the owner of a lot 15 by 150 would be justified in erecting a building covering the whole of the lot, and its utility would be restricted to a very small shop.

"The appraiser is not apt to meet this factor often, but it is liable to occur particularly in the factory, warehouse and retail business districts.

"On the contrary, the question of plottage in the residential districts is rarely a disturbing factor, except downward. Here the conditions are usually reversed if the lot is usable, for where districts are established the man who works in a few small lots with inferior improvements usually absorbs value from the surrounding property at the expense of higher classed property."

The plottage value factor is especially employed in large cities. To operate an apartment house, a hotel, an office building, or a theatre involves organization—organization to lease, to maintain, to supervise, to account, etc. Smaller buildings require the same service. Either the services are not rendered or they are performed at a greater cost per unit than they are for larger buildings. Hence there is a continued demand for larger lots than as originally laid out. To acquire these and consolidate them into a workable and economic unit involves extra cost, usually for the payment not only of an exorbitant price for the land but also for the cost or value of the improvement. Hence these units when assembled have a plottage value.

Plottage value is more frequently considered in eastern cities where sublots in the business section are found to be twenty or twenty-five feet and 100 feet deep. In western cities where the lots are generally found to be wider, frequently fifty feet by 150 feet deep, this factor is not so frequently involved.

Warehouse and factory property, where it consists of assembled units, must necessarily involve a greater value than the sum of the smaller units with their respective divided original usage.

The question of the relative values of a continuing right-of-way compared with the values of adjacent property is not a new question. In 1900 the Legislature of the State of Michigan passed a law which resulted in an investigation by the Michigan Board of State Tax Commissioners into the value of railroad property. Prof. Mortimer E. Cooley, Dean of the Department of Engineering of the University of Michigan, was appointed to make the valuation of the physical properties. Referring in his report to the difficulties involved in assessing the right-of-way lands, Prof. Cooley said:

> "Perhaps no part of the work involved so much discussion as the matter of right-of-way, station grounds, and real estate. It is well known that a railroad right-of-way costs considerably more than the value of the land for other purposes. The question at issue was whether the railroad should be charged for what the right-of-way actually cost or for what it was worth for other purposes before it was purchased. There could be no question, it would seem, that the first cost or cost of reproduction should include the actual price paid for the right-of-way. Certainly this is one of the elements for which money must be raised, the same as engineering, legal expenses, interest and discount, and miscellaneous expenses, including the expenses of organization and contingencies. Theoretically, at least, the cost of reproduction may be considered to represent the value of a legitimate bond issue, and to such extent the value of a railroad."

On the question of the valuation of the right-of-way as determined by contiguous property, the following was said:

> "The true cash value of a thing has been defined as the price upon which a purchaser and a seller mutually agree, and at which an actual transfer takes place. If an attempt were made to purchase an existing right-of-way, as, for example, an entrance into a city, if the owner were willing to sell at all he surely would take into consideration what it would cost the purchaser to get into the city by any other route, and the prospective purchaser would surely consider what it would cost him by another route.
>
> "The conclusion finally reached was to add to the value of the right-of-way, as determined by contiguous property, an amount fairly representing the additional

> cost to the railroad. A very careful examination was made of the records on file at county seats and elsewhere, showing the transfer of a large number of pieces of property, both to railroads and to other purchasers. As a result of this examination throughout the state, it was found that the actual price paid by the railroad was from 100 to 125 per cent in excess of the value as determined by adjacent property."

The State of Wisconsin followed closely upon the Michigan method of valuation. In a report on the 2nd of January, 1905, by Prof. W. D. Taylor on the probable valuation of right-of-way lands, he said:

> "The correct valuation of the land held by the railways for right-of-way, yards, and terminals is one of the most important as well as one of the most difficult tasks in finding the physical values. The term "right-of-way" is intended to include the land for stations, yards, and terminals.
>
> "Two distinct results should be obtained as provided for the last two columns on blank From W. B. A. 4; namely, first, the market value per acre of the land for other purposes, and second, the value per acre as right of way. The first is to be obtained in the manner explained above.
>
> "The second should be obtained by taking the average market price for other purposes of the land actually within the right of-way and by adding thereto the damages to the adjoining property forming a part of the same parcel which are directly attributed to the proper construction and operation of the railroad across that portion of the land taken.
>
> "The strip of land usually taken for railroad right-of-way is not generally along or parallel to the boundaries of the land. The proper construction of the road often makes access from the land on one side to the land on the other side more difficult, and such access at more than one crossing is often impossible on account of right-of-way fences, deep cuts, or high fills. The natural drainage is oftentimes interfered with. Roads and streets may be closed or changed. The noise, smoke, danger, and inconvenience from the operation of railroads may not be distinct subjects of damage, yet, in so far as they depreciate the market value of the remainder of the premises they should be considered. These considerations always make the right-of-way value

more, oftentimes much more, than its market value for other purposes.

Scientific appraisers quite generally appreciate the propriety of valuing adjacent lands on a different basis because of their size. M. P. Talmage, in his manual on the assessment of real estate in New York City, published in the year 1914, said:

> "Where the appropriate development of any property demands lots of not more than 25 feet wide, the value of a plot one hundred feet wide is no more than the aggregate value of four lots each 25 feet wide. Where the appropriate development demands plots of one hundred feet in width, and such lots may be easily acquired, the additional value for plotting may be slight; but if a large plot is difficult to accumulate, the added value for plottage may be 20 per cent or more. The amount to be added for plottage depends upon the necessity of a large plot for appropriate development and the difficulty in the cost of accumulating it.
>
> "The converse of plottage value is found when a lot too small for appropriate development is so enclosed by permanent improvements that its market value is less per front foot than that of the adjoining land. In such cases, an appropriate reduction should be made BELOW the assessment which would be produced by the unit of land value.

Lawson Purdy, formerly chairman of the Board of Assessors of New York City, in an address before the Pan-American Congress, Washington, D. C., page 254, Volume II of the Proceedings of the Pan-American Congress, is quoted as follows:

> "Where the appropriate improvement of a section demands lots of standard size, a lot of greater width than standard size has no more relative value than a lot of standard size; but where the appropriate building for that section requires a plat of greater width the larger plat has a greater relative value than the standard lot. In such cases an appropriate addition must be made to the value above that indicated by the unit, according to the size of the particular lot to be valued. In a tenement-house section in Manhattan, a lot 37½ feet wide is worth relatively more than a lot 25 feet wide, because a tenement house under the law cannot profitably be built on a lot 25 feet wide, whereas an economical tenement house can be erected on a lot 37½ feet wide. In a territory suitable for lofts a lot 50 feet wide is worth more than twice as much as a lot 25 feet wide,

> and generally a lot 100 feet wide would be worth more than twice as much as a lot 50 feet wide. The appropriate increase for plottage must be considered with reference to the actual conditions prevailing in the section where the lot is situated. An addition for plottage may be as great as 20 per cent or even more. Conversely, if an appropriate improvement cannot be erected on a lot less than 25 feet in width, a reduction must be made below the value which would be produced by the unit, varying with the degree of depreciation due to the unusable character of the land in question."

It will be noted from the above that plottage may be as great as 20 per cent or even more.

Not only do real estate appraising companies generally add a plottage value to a large tract of land where the same is composed of a number of separate units, but business firms quite generally consider that the addition of adjacent units adds a greater value than the cost thereof. Indeed, the cost of residence additions to factory plants, where the same are located in residence sections, involves frequently the purchase of a lot of land worth $50 per foot, with buildings thereon worth $100 per foot. In a case of this kind, the company will carry on its books the value of such added unit or lot at the total cost thereof and not merely at the cost of the lot without the improvement. In cases of this kind, these industrial corporations may carry on their books and consider the value of the property purchased at $150 per foot, as compared with property in the immediate vicinity worth, perhaps, $50 per foot.

So in the case of transportation companies, the cost to them in the purchase of right-of-way lands involves not only the per square foot cost of the part taken but also the damage to the residue of the lot. To this must be added the cost of any improvements upon the land taken and damage to the improvements on the adjacent lot. In addition, there are engineering fees, brokerage charges and legal fees, so that in some cases the cost to the company may be from eight to ten times the value of the adjacent land value figured on the per square foot basis.

Such cost to the transportation companies is the basis for their bond and stock issued and generally allowed for the fixing of freight rates.

## CHAPTER 4

# APPRAISALS ON PEDESTRIAN COUNT, EARNINGS, RENTALS AND BUILDING PERMITS

Population of a city affects land values—Relative populations and front foot values—Peak values in large cities—What traffic counts indicate—How to interpret them—Analyzing downtown traffic.

There can be no doubt that the population of a city definitely affects land values, not only in the aggregate, but as to the value of the best business retail property.

L. P. Jerrard, Jr., of the American Society of Civil Engineering, says:

"The total land value of a city depends primarily on its population, but is influenced to so great an extent by the city's wealth and other factors that comparisons between cities of the same population, as to either the total land value or the value of highest priced land, offer considerable variation. It is believed that the range of values in the accompanying table will cover the conditions in all except a very small percentage of cities. The lower values represent more nearly the normal conditions, and the higher values occur in cities where there is a large transient population or where the business district is restricted. All factors which tend toward the expenditure, in a city, of money which is earned elsewhere, raise the value of business land. For instance, the location, in a city of 25,000 people, of a university with several thousand students would materially increase business land values above those of other cities of the same size. In determining the population of a city, there should be considered such suburbs as are close enough to constitute a part of the city proper.

"An investigation of land values generally involves a study of the forces at work in a city's development, the land requirements and distribution of its utilities, and the strength and direction of the structural movements which are constantly taking place. The extent of such a study would depend, of course, on the land under consideration. In valuing a single lot in a residence section, such preparation would not be called for, but in the case of high-priced business land, it is necessary to be informed on these points."

Mr. Jerrard offers a diagram showing that the best business property
in a city of 200,000 population will run from $2,000 to $ 4,000
in a city of 400,000 population will run from 3,800 to 6,800
in a city of 600,000 population will run from 5,500 to 9,600
in a city of 800,000 population will run from 7,000 to 12,500
in a city of 1,000,000 population will run from 8,900 to 15,400

Having in mind that the above estimates were written in the year 1916, it would seem as though these values should be increased very materially due to the depreciated dollar, ranging probably, from 50% to 75% more today than in 1916.

From newspaper clippings of recent years, a few outstanding cases of high retail property values in larger American cities are submitted.

During the latter part of 1924 the Harriman National Bank of New York City purchased a lot adjoining its location at $304 a square foot, which was then said to be the highest price ever paid in that city up to that time. It fronted 96 feet on the street and extended back 105 feet and represents about $30,400 a foot for 100 feet deep.

In Philadelphia, in the month of May, 1925, a private dwelling on the northwest corner of Sixteeenth and Chestnut Street, known as the Reed family home, was sold at a reported consideration of $1,100,000. The lot had a frontage of 42 feet on Chestnut Street, 153 feet on Sixteenth, and 42 feet on Ranstead. This property shows a valuation of about $25,000 a front foot on Chestnut Street without considering the corner or rear street influences. It is not, however, in the highest valued section of Philadelphia.

In Cleveland, several parcels on Euclid Avenue, near East Fourth, were leased on rental of 6% on a valuation of $25,000 representing an inside lot of one foot front by 100 feet deep, uninfluenced by corner or other street influences. There are assessments in Cleveland on corner lots in excess of $42,000, but this represents, as aforesaid, a corner, an added depth, and is wider in the rear than in the front, which again emphasizes the importance of comparing values only on a standardized basis.

In Toronto, the most valuable property, in the year 1919, was said to have been that situated on Yonge Street, immediately north of King Street, where it was selling for $10,000 to $12,000 per foot.

In Chicago, in the month of September, 1924, a lot 21.6 feet by 80.25 feet, being the northwest corner of Clark and Madison Streets, was leased for 21 years by the A. Schulte Company from Mrs. Charles F. Morrison, et al., at an average net rental reported to be $52,500. Capitalizing this rental at 5% (as is usually done in Chicago) brings the value of the land to $1,050,000 at the rate of $50,000 a front foot, which figure, it is said, has never been equaled in Chicago. A four story building occupies the site.

In studying the population factor as indicative of the best retail property values, the student should bear in mind that the population within the political confines of a city is not the only factor to consider in arriving at the maximum retail property values.. Many cities enjoy a number of adjacent villages and cities of large population, which, to all intents and purposes, add value to the downtown property of the larger city regardless of its political or geographical confines. The city of Boston, for instance, has a very large suburban territory upon which retail property may draw for assessments.

In comparing retail property values of various cities, it will be found that some of these values represent lots of unusual depth, some are on a corner, some enjoy double frontages, that is, they are located on two or three streets, and some of them are narrow lots. Comparisons without knowledge of complete details are of very little value, yet the thought remains that population does have a very close relation to business retail property values. Good reasons may always exist, however, to explain unusually high or low values in any given city.

Having in mind the relativity of traffic to value, greater study is being given to the numbers of pedestrians passing certain points. In an effort to seek all possible light on the value of particular sites, the automatic counter is clicked as each pedestrian passes by a given point. Chain stores generally figure the value of land, its proper rental and possible sales on the traffic enjoyed by proposed sites. Sometimes the counting is done by two employees, one checking the women, while the other counts the men.

In a recent appropriation case, one of the experts took an 8-hour traffic count to show the relative value of three streets compared with the value of a fourth site about to be appropriated. The value of the three streets was known, but the value of the site to be appropriated was unknown. This count showed an hourly flow of traffic of 1071, 920 and 817 respectively compared with 518 pedestrians at the site about to be appropriated. Testimony was offered that the latter site was the more valuable. The expert's testimony proved of great weight with the jury because of his apparent intensive study of the situation. The witness had something beside a blind guess or opinion.

Certain chain stores, it is said, never lease a proposed site without taking a pedestrian count. These counts are not only valuable as showing the pedestrian activity in a particular city compared with some existing store in the same city, but also by way of comparison with pedestrian counts at their stores in other cities. They are able in this way from their abundant experience to approximate very closely the amount of business that may be done without advertisement. They are thus enabled to closely determine the amount of rent they can afford to pay, based on the business done and rentals paid elsewhere.

Sometimes these counts are made by lessees who hold under re-appraisal leases. Evidence is then submitted to the arbitrators fixing the re-appraisal value and rental, showing in what proportion the pedestrian traffic has increased or decreased, or how it compares with some other value. In the former case, for example, when 10,000 people pass a given point between certain hours on a given day in 1920, if 10,000 people passed the same point in 1910 during a similar interval, it is argued that the rental and capital value of the premises can be no greater, notwithstanding sales in the vicinity may show a greater, perhaps speculative, value.

A number of building associations annually engage in keeping tab on the growth of cities, showing the per cent of growth or recession at certain points. Very recently, the National Association of Building Owners and Managers appointed a committee to develop and standardize traffic counts. When the association finally adopts a standard so that counts are taken both of pedestrians and street traffic at various points in their respective cities, taken during approximately the same relative times, data of great importance, of historical worth and of scientific value will undoubtedly result.

The Cleveland Association of Building Owners and Managers in an introduction to tables showing results of counts explains very fully the mechanics used:

"Present and future property values in the retail district depend largely upon the average rent paying capacity of the ground floor store room merchant. His ability in this direction is in proportion to his sales volume.

"In a general way, through the medium of proper merchandise display, the volume possibilities of the merchant are in proportion to the sidewalk pedestrian traffic, although the traffic yield varies on different streets, dependent upon the purchasing power of the individual and the average number of merchandise buyers passing a given point. In a growing city, it is sometimes difficult for the owner or manager of a property to realize that his ground floor space has increased in value, due to traffic increase, until after he has entered into some unfavorable lease with a tenant.

"Several years ago, it became apparent that if a sidewalk traffic count could be taken simultaneously at certain fixed stations, throughout the downtown district, the relations between volume of traffic and current ground floor rentals could be ascertained; and that, if traffic counts were subsequently taken at these stations regularly and under conditions which would reasonably insure a fair average, comparisons could be made with previous counts and the trend analyzed. Stations for counting the sidewalk traffic were established throughout the downtown district, at points which are not affected by corner, arcade or alley influences. A careful study of the rise and fall in the total yearly sales volume of certain principal stores determined the times when conditions would most nearly insure the taking of average counts. The weekly cycle of volume disclosed the fact that an average of Wednesday and Friday would fairly represent the daily volume for the week, with the result that the second Wednesday and Friday of June and the first Wednesday and Friday of November were selected. In order to eliminate the diluting influence of the morning, noon and night rush, it was determined that the count should be made between the hours of 9:30 and 11:30 in the morning and between 2 and 4 in the afternoon, making a four-hour count.

"Because the average woman is the family purchasing agent and her value in the traffic is therefore greater, the percentage of women in the traffic on the principal retail streets is now a part of the record. The predominance of men or women in the traffic should be given consideration in selecting ground floor tenants. In fact, comprehensive knowledge of pedestrian traffic, its makeup and trend is essential in order that the retail space in a building may be advantageously leased to tenants who will derive maximum yield from the traffic and who will therefore be of the greatest constructive value to the property."

These counts should be shown in detail morning and afternoon of each day so that apparent incongruities may be explained. On one day a leading department store might advertise a red-letter sales day. There might be a bank holiday, there might be a parade or a convention in the city, sidewalk repairs, showers, and many other influences might be encountered.

Not only is it interesting to compare one station with another on a given day but a record of the development of sidewalk traffic from year to year at particular stations shows the rapidity of growth.

In general it should be said that pedestrian street traffic counts have their value They undoubtedly serve a valuable purpose in showing in a non-growing city the relative value of land. In growing cities, they show the direction the city is taking in commercial activity. They show where property is rising and where it is at a standstill.

Traffic counts must be analyzed with intelligence. It must be remembered, first, that the value of a site is dependent on twenty-four hours of traffic, not on spasmodic, nor occasional, disinterested traffic. Traffic not adding to usual profits to merchants is that which is always in a hurry, such as to and from depots, subway stations, wharfs, etc. Surely they add some additional value compared to points further away, but they have not the value incident to leisurely walking in thoroughfares continuously for perhaps the entire day. Second, there is a difference in quality. Certain traffic may be 5 and 10 cent store trade, while other traffic may be lighter, with sales fewer, but profits great. Third, traffic may be the result of very expensive advertisements, drawing and alluring a crowd of bargain hunters, interested in little else. Fourth, a section may be comparatively quiet by day, but very active at night, such as in theatre districts.

These and many other reasons might be urged for reading sidewalk counts with caution and intelligence. In a recent assessment complaint a traffic count of a certain street at certain points was given considerable study and certain final deductions made therefrom. Just before laying away his paper and dismissing the subject the witness read "It should be borne in mind that this traffic count was affected severely by the fact that the north side of the street was in the sun, on a very hot day, causing an extremely heavy count on the south side which was in the shade." Thus a single fact may invalidate the count on a particular day or destroy its normal relativity.

## TRANSPORTATION AGENCIES

It is a familiar complaint of late years that down-town property is becoming less valuable, that business is halted at subcenters due to auto congestion, traffic and loss of parking rights in front of merchants' stores. How much business loss do these new conditions entail? What proportion of down town buyers use private automobiles for transportation to down town stores?

A cordon count was made on a typical week day 7 A. M. to 7 P. M. of passengers entering and leaving the central business district of Chicago during the month of May, 1926. The methods of transportation used by 1,693,506 persons going to or from the business district, 846,753 (½) representing ¼ of Chicago's population, was as follows:

| Mode | No. of Passengers | Per Cent |
|---|---|---|
| Street Car | 568,925 | 33.6 |
| Elevated | 473,736 | 28.0 |
| Steam R. R. (suburban) | 192,909 | 11.4 |
| Steam R. R. (through) | 29,173 | 1.7 |
| Electric Interurban | 13,870 | 0.8 |
| Motor bus | 89,369 | 5.3 |
| Passenger auto | 325,524 | 19.2 |
| Total | 1,693,506 | 100.0 |
| Mass Transportation | 1,367,982 | 80.8 |
| Passenger auto | 325,524 | 19.2 |
| Total | 1,693,506 | 100.0 |

From the above table it is evident that 19.2% or about one-fifth use private autos as a means of transportation. Another count of 96,082 shoppers, who themselves reported their means of conveyance, showed the number not only using the auto, but who came by parking at the curb. The figures are as follows:

| Conveyance | No. of Shoppers | Per Cent |
|---|---|---|
| Suburban trains | 18,742 | 19.5 |
| Elevated trains | 32,419 | 33.8 |
| Street cars | 25,191 | 26.2 |
| Motor coach | 10,980 | 11.4 |
| Taxi cabs | 1,092 | 1.1 |
| Total autos | 7,662 | 8.0 |
| Autos parked at curb | 1,505 | 1.57 |
| Total | 96,082 | 100. |

It will be noticed that but 1,505 shoppers of 96,082, representing but 1.57% park at the curb. From this may be deduced that land values are already adjusted to an almost complete elimination of parking-at-the-curb business. The figures are also important as showing the relative importance of the various transportation agencies as land value factors.

The question frequently arises as to whether or not there is justification for the establishment in a neighborhood of retail stores such as grocery, men's furnishings, boots and shoes, dry goods and hardware. A study was recently made by the Joint Commission of Agricultural Inquiry relative to the number of dealers, the population per dealer, and the families per dealer in the United States. This table is of more than passing interest as indicating the average number of people probably necessary for the successful operation of these various lines of retail activity. The table is as follows:

| Kind of Business | No. of Dealers | Population Per Dealer | Families Per Dealer |
|---|---|---|---|
| Grocery | 334,212 | 315.3 | 72.6 |
| Men's furnishings | 40,339 | 2,616.6 | 602.7 |
| Boots and shoes | 141,867 | 245.1 | 171.6 |
| Dry-goods | 35,207 | 3,002.5 | 691.5 |
| Hardware | 37,032 | 2,854.5 | 657.5 |

From the foregoing table it appears, for example, that it requires 315.3 persons on an average to support each grocery store in the United States.

ONE OF THE WORLD'S MOST COSTLY BUILDINGS

Ten story marble bank building housing the Fourth District Federal Reserve Bank of Cleveland. Of monumental design, the materials used are the most costly obtainable. The main banking room is said to be the most beautiful banking room in the world. The building contains a miniature armory where ammunition, rifles and cannon are stored for purposes of defense. Directors' rooms are of richly carved oak with teakwood floors. Eight floors are devoted to business. On the ninth are baths, medical rooms, kitchens and storage space for bank archives. The tenth floor is devoted to cafeteria, gymnasium, and assembly rooms. The building, erected during 1921, 1922 and 1923, contains 7,212,362 cubic feet, and cost $8,196,620, the cubic foot price being $1.14.

# CHAPTER 5

## APPRAISALS BASED ON EARNINGS

Many problems involved—A good system when there is no market—Effect of varying income—The English system of assessing rentals—Approximate appraisals based on earnings—Operating costs considered.

Many claim that real estate should be assessed solely on a basis of its net income. The legislature of Ohio at its 1922-23 session passed a law requiring a state-wide re-appraisal of all real estate in Ohio, which bill however, was vetoed by the governor. This measure required an annual listing of real estate with a statement of gross and net income for the preceding year. This would have involved useless and wasteful expenditure of money, because, first, the information would have been filed only by a part of the owners. At least 50 per cent of addresses are unknown, owners not residing on the property. Second, with certain lots only appraised on the income, others would be assessed dissimilarly on other information, thus resulting in gross inequalities. Third, the information as to gross income for a single year is no criterion of value. Fourth, net income is a matter of bookkeeping and generally is subject to challenge. Fifth, appraisement on income appraises only the economic value and not the market or speculative value. Sixth, vacant lots would not be assessed at all since they produce no income.

Use of such a system would result in exempting vacant property or partially used or inadequately used property. Indeed, where is the plot of land adequately improved and properly used and managed? It is a sufficiently difficult task to find the market value of property from sales and leases which must be analyzed for errors, exchanges, and fictitious prices.

A consideration of the following details in each instance would be necessary to avoid assessing one property 100, 200 and even 300 per cent higher than some adjacent property.

1—Is the lease for a long term, now expiring, or recently executed?

2—Is the tenant solvent or of questionable solvency?

3—Is the business established or not?

4—Is the use hazardous or otherwise, possibly a pool room or a soft drink saloon?

5—Are repairs made by the tenant or landlord?

6—Was the building made tenantable by the landlord or the tenant?

7—Is the business suited to its use?

8—Is the landlord generous, skillful or otherwise? Is it his main business or a side line?

9—What allowance should be made for structural depreciation?

10—What allowance should be made for obsolescence?

11—How much may be allowed for janitor service and repairs?

12—What is a proper charge for management?

13—What is a proper charge for collection?

14—Are rents lowered in anticipation of rising land values?

15—How much shall be allowed for vacancies?

In particular appraisals earnings of a piece of property must of course be considered. If vacant property is leased for 99 years such evidence, especially where the rentals are well secured, is far more potent in fixing the value of the parcel than is the temporary earnings of an improved site.

The same thing applies to earnings of real estate occupied by a railroad company. Such property may not be valued on the basis of adjoining property, nor by comparison with other railroad lands. The value of such real estate is best indicated by the profitableness of its use, but in considering the net earnings of such, or other real estate, one must bear in mind that normal use, management and operation must be assumed. Neither the most nor least efficient of these are to be considered. Thus the earnings of a railroad or office building or apartment. under extra good or poor management or operation or use afford a poor criterion of value. The finding of a norm in these matters is attended with many difficulties, involves endless discussion, and broad comprehension of experiences of similar ventures. It is for this reason that statutes of various states provide for the valuation of such properties on consideration of the company's earnings, or on a valuation of the market value of the company's stocks and bonds, or on consideration of the value of the company's tangible (real and personal) and intangible (money and credits) assets.

Property must, in the nature of things, be valued on its earnings, where there is no market. In the case of People ex rel Powers v. Kalbfleisch, 49 N. Y. Supp. 546, 25 App. Div. affirmed without opinion 156 N. Y. 678, the court said, among other things:

"While this property (a ten-story commercial building, known as 'Powers Block' in Rochester, N. Y.) was assessed at $1,000,000, it cannot be said to have any market value for the reason that there is no other property like it in the city and consequently none has ever been put upon the market."

Likewise in the case of People ex rel New York Title & Mortgage Co., the Court had before it the duty of appraising premises at 135 Broadway, valued approximately at $1,500,000. Considerations were given to the opinions of valuation at which such a piece of property would sell, but the Court said:—

> "It is obvious that the opinions of the valuations at which such a piece of property would sell are necessarily somewhat speculative. The unequal and uneven method of improvement on Broadway in this locality makes the desirability of each plot a matter of circumstances and there can be no fixed unit or value as in localities where the improvement follows some uniform standard. Under such circumstances the values obtained for other properties are not a dependent criterion and opinions based thereon have no great weight. **A more satisfactory method is to take the property as a rent producer and see what attraction it would have to a purchaser for an investment of moneys to secure an annual return."**

Prof. Chas. J. Bullock, in 1918, referring to the Massachusetts Income Tax Law is quoted as follows:

> "The fundamental basis of true and full land valuation is the actual net income averaged over a term of 5 or 10 years and from an adequate building occupied by first-class utilities.
>
> "The true, full valuation is derived by capitalizing such average income at a minmum rate of 6%, which has been the almost universal rate of late years. Reasonable depreciation must be allowed every year on the building and deducted from earnings."

It would seem that with the public mind centered during the war on the question of profiteering, the proper allowances for depreciation, management, vacancies, fair rentals, etc., would have been standardized by public authorities, civic institutions or real estate experts. Nothing of the kind exists. The greatest confusion prevails. No standardized gross or net rental for residences, apartments, stores or other buildings is possible. And hence no assessment based on income would generally satisfy. Indeed, any such assessment in its great variation would so lose its uniformity of character as to condemn its continued use.

An assessor is frequently importuned to increase assessments with every increase of rental. Profiteers should undoubtedly be punished. Yet extra burdens laid on landlords who have increased rentals only enough to pay a normal profit on present values can only injure the tenants' cause—not help it. What the public wants is more investment of funds in new dwellings. Exemption of mortgages thus invested, exemption from taxation wholly or partially of newly constructed residences for a limited period will do more good than any other policy. This is especially so with the high cost of money, material, labor and high profit and return of industry and investments therein.

Of late years there has been considerable advocacy for the greater exemption from taxation of residence buildings. In Toronto working men's houses up to $4000 are taxed at a reduced rate. Several states have enacted legislation for a $500 homestead building exemption thus giving point and pith to the homestead exemption enjoyed in every state as against judgment creditors. Since 1926 the State of New York exempts investment in homes from state taxes and authorizes local government to further exempt such from local taxation. In agricultural Nebraska, the Tax Commission as long ago as 1914 recommended that improvements be assessed at 75% of their value. The Farmers' National Council in 1923 favored a similar provision. The Michigan Real Estate Association in the year 1922 recommended that buildings be taxed at one-half the rate on land. The taxation committee of the Illinois Association of Real Estate Boards favors a lower rate on improvements. In Pittsburgh all building improvements are assessed at 50% of their real value. It would be better that the practice now prevailing of treating improvements more liberally than the land itself should be given legal sanction instead of depending upon administrative leniency.

The American Homes Association, incorporated under the laws of Ohio with headquarters at Des Moines, Iowa, is heading a movement to secure the exemption from taxation of all homes to the value of $5,000. The association is insisting that the home is not a piece of property used for producing profit, but is rather the headquarters of the family, where the children are taught to love the home and the community, and that therefore it should not be made the vehicle by which money is collected for the carrying on of public business. The home produces no profit, in fact, money invested in a home is usually never recovered because the moment a family moves into a new home it depreciates in value. It is the family headquarters which is the very basis on which government has always rested and on which it must always depend for strength. The family home should never be threatened because of taxes, or disaster, or unemployment, or sickness, or any other misfortune coming to the family.

Section 5440 of the Code of Iowa provides for the formation of corporations not for profit, without capital stock and where dividends cannot be paid. The association is demanding that a home occupied by an owner shall be subject to a tax exemption of $5,000 and the organization is proposing to extend its activities to other states. The reason for such attempted exemption is found in the general assumption that the small taxpayer pays on the highest taxation basis. In the words of the State Tax Commission of Missouri in the Fourth Biennial Report 1923-1924:

> "The small taxpayer seldom appears before County boards of equalization. He seldom makes much complaint to you, and if he doesn't get the desired relief he goes before your county board of equalization and demands and sometimes obtains a lower value. It is not difficult for the complainant to refer to some other property as being assessed much lower than his own. Indeed, the complainant rarely knows the value of his own property and therefore knows less of the property to which comparison is made."

In Denmark, during the year 1926, a law was enacted authorizing municipalities to permit certain structures to be exempt up to certain values.

## EFFECT OF VARYING INCOME

Another difficulty rarely within the vision of the tenant is the assessment of identical properties differently, because of varying income. Increase by 25 per cent any one of four corners at any street intersection, each identical as to cost, and complaints are lodged as to a lack of uniformity. It would require an autocrat to enforce such assessment. The importance of uniformity would then soon be appreciated and demanded by enraged property owners.

What a zig-zag and impossible assessment would arise from a sole consideration of income is immediately evident on investigation of rentals in any particular district. For illustration, the rentals a few years ago on Euclid Avenue from E. 14th to E. 18th Street, in Cleveland, involving a distance of probably 700 feet, are submitted:

| Lessee | Rentals | Approx. Size Store Room | Standardized Store 20x100 ft. |
|---|---|---|---|
| Tenant A | $ 3,600 | 20x 98 | $ 3,560 |
| Tenant B | 3,900 | 18x100 | 4,105 |
| Tenant C | 7,500 | 16x100 | 9,375 |

| | | | |
|---|---|---|---|
| Tenant D | 2,360 | 17x 70 | 3,522 |
| Tenant E | 10,000 | 17x125 | 8,800 |
| Tenant F | 23,000 | 30x120 | 12,200 |

In the above calculations, stores less than 18 feet have been widened to a standard store of 20 feet in width, while those wider have been reduced to the standard. Shallow or deep stores have been reduced to a standard of 100 feet in depth, using therefore the Cleveland unit rule of value. In the last two cases, a special allowance was made because of a 10-foot basement, available for mercantile purposes, and for an additional allowance for a high ground floor available for mezzanine purposes. The allowance of $1.00 per square foot or $2,000 has not largely affected the net rental paid for the standardized stores as above indicated.

It would seem from the above that the rentals of a standard store in a single section vary 350 per cent. And yet the land is worth about the same and with the exception of the latter two stores, the buildings and service do not largely differ.

How much rentals vary in different cities is shown by the following summary of office, store and basement rentals of 184 large office buildings in the United States located in the large cities, for 1925, will be of more than usual interest.

| | Number | Actual Rent | | | |
|---|---|---|---|---|---|
| City | Bldgs. | Office | Store | Basem't | Total Rent |
| Atlanta | 6 | $237.9 | $215.7 | $41.7 | $223.6 |
| Chicago | 23 | 258.8 | 670.2 | 90.1 | 279.1 |
| Cleveland | 10 | 181.7 | 290.4 | 65.5 | 203.8 |
| Detroit | 13 | 221.5 | 453.8 | 57.3 | 243.7 |
| Indianapolis | 4 | 112.8 | 212.1 | 29.5 | 119.3 |
| Los Angeles | 10 | 224.6 | 384.0 | 52.6(1) | 236.1 |
| New York | 8 | 344.2(3) | 570.0(3) | 53.0(1) | 335.8(8) |
| Oakland | 5 | 233.2 | 518.3 | ... | 249.8 |
| Portland | 10 | 148.2 | 345.5 | 38.8 | 162.8 |
| San Francisco | 12 | 203.2 | 517.3 | 62.8 | 231.0 |
| Spokane | 9 | 141.2 | 251.7 | 44.8 | 163.3 |
| St. Louis | 8 | 202.8 | 346.4 | 65.7 | 210.8 |
| Seattle | 5 | 163.9 | 122.1 | 95.6 | 133.4 |
| Total | 184 | $204.1 | $351.1 | $58.4 | $225.3 |

This shows that the average office space in these cities rented for $2.04 per square foot for 1925. Store space was rented for

$3.51, while the basement space was rented for $.58. Noteworthy is the fact that New York is getting the most for office rental, viz. $3.44, and that Chicago is getting the highest amount for store space, viz. $6.70 per foot, with New York and San Francisco following. Appraisers of high class business property should attach some importance to these figures. Prospectus showing $3.50 for office space, $5.00 and $6.00 for store space, should be analyzed with exceeding caution, as belying the usual run of experience in the various cities.

Realtors in making accurate appraisals must consider not only present rents but also potential rents. Frequently little other evidence is available. The assessor's task is a wholesale one. In many cities he appraises thousands of parcels within a short period of a few months. He cannot in the nature of things follow the methods of a close and tight appraisal of each parcel of land and building.

## ENGLISH ASSESSMENTS OF RENTALS

The difficulties of assessing on rentals is well illustrated in the English system of taxation of real estate. England has been assessing real estate on an income basis for at least fifty years. With this experience England ought to have perfected standards of income, of depreciation, repairs, of management, etc. English assessors assume a hypothetical occupant and a hypothetical income (from year to year). Assessments are fixed "upon an estimate of the rent at which the building might reasonably be expected to let from year to year * * * after deducting therefrom the *probable* average annual cost of repairs, insurance and other expenses necessary to maintain them in a state to command such rent."

"The probable annual average cost of repairs" would seem to indicate that actual figures of cost may or may not be used. But this is not the case. In London where a "scale of deductions" (supposed to represent the probable average annual cost of repairs) is fixed by law, the maximum allowances permitted under the law are in practice generally granted. The maximum statutory allowance is 16 2/3 per cent for repairs, insurance, etc., deducted from the gross rent that a hypothetical tenant would pay. 16 2/3 per cent of the income means about 3 1/3 per cent of the capital value in cases where the gross income is 20 per cent or 2½ per cent where the gross income is 15 per cent, the prevailing residential gross income. Improved premises, when unoccupied, are not liable for taxes. The London assessing authorities find great difficulty in imagining this "year to year" hypothetical tenant. It is easy in the case of habitable houses being let usually from year to year. But in the case of business property, in a rapidly rising section, let for 5, 10 or 20 years, the present rent may be one-fifth what a tenant might be expected to pay from year to year.

Considerable sentiment is developing in Canada and in this country for the assessment of real estate on its rental value as in England. This would result disastrously for the cause of equitable assessments. In a study of the English (and European) system of rating (assessing) net annual rentals as compared with the American system of assessing capital land and building values, one comes to the conclusion that the American system is more intelligible and that assessments thereunder are more comparable. It taxes hopes of the future, reduces the tax on industry, permits of less chicanery, collusion and discrimination and is less costly. A comparison, for example, of the assessment of Birmingham and Cleveland, O., a few years ago, shows that the net annual rental of Birmingham is much less than 5 per cent on the assessed building value of Cleveland, although the latter is smaller in population. In other words, the land value of Birmingham is not assessed at all.

## APPROXIMATE APPRAISALS BASED ON RENTALS

While assessing for taxation permits of little particularity and precludes a study of rentals in each case, it is necessary that the realtor, the inheritance tax appraiser and other students of values have available some general rule for deducing capital value from gross rentals.

Appraisers frequently adopt a rough and ready method of deducing a value of improved and fully rented property through capitalizing monthly rentals. The most common method as to residences is to consider a month's rental as 1 per cent of the value. For example, a rental of $75.00 a month would probably indicate a capital value of $7500. This method pre-supposes that 12 per cent per annum is sufficient return to continue the investment of capital in the industry, which as to 1919 and 1920 conditions was entirely insufficient. The 1920 and 1921 tax rate increases also affect the necessary gross rental. A prominent real estate expert after a study of the problem finds that a gross rental of 15 per cent is a proper charge made up as follows:

| | |
|---|---|
| 2.30% | Taxes |
| 1.70% | Management |
| 2. % | Depreciation |
| 2. % | Maintenance and Insurance |
| 7. % | Interest |
| 15. % | Gross annual allowance |
| 1¼ % | Gross monthly allowance. |

In other words, the monthly rental represents 1¼ per cent of its capital value.

With such allowances, it would be proper to multiply the monthly rental by 80 instead of 100 as formerly was commonly done. Thus the property at $75.00 per month would be worth $6000 instead of $7500. The schedule is open to debate as to the proper per cent allowance for management, likewise for maintenance and likewise for depreciation.

The allowance of 2.30% for taxes while apparently below the average may be considered more nearly as a norm when one has in mind that the prevailing tax rate is based on a percentage appraisal. Thus an 80% appraisal with a tax rate of $2.75 becomes a real tax rate of $2.20 per $100.

Another criticism is that no allowance is made for vacancies which always occur in the best managed properties. In pre-war times an allowance of one month's rent (1¼ per cent) in the year for vacancy or loss of rent was not deemed extreme. An additional 1 per cent for investment profit and only ¾ of 1 per cent for vacancy or loss of rental would involve a gross annual allowance of 16¾ per cent, or about 1.4 per cent per month. These allowances would require a multiplier of seventy instead of eighty or one hundred. In the given case the property renting at $75 would be worth $5250. We have then on a rental of

$75 per month a deducible value of $7500, $6000 or $5250 with monthly multiplying factors of 100, 80 or 70 respectively as we concede the propriety of various allowances as elements of cost in the operation of such properties.

Criticism has been offered to the 1.70% allowed for management. Some managers get 5% on larger accounts and 7% on smaller accounts, and where the account is very small or hazardous as in the case of property used by foreign or colored tenants, they may get 10%, which latter figure is usually regarded as a standard rate. But these percentages, it should be borne in mind, are based on the rentals received. It will be observed, however, that if the gross rental of a piece of property is 17%, that a 10% management charge thereon would involve 1.70% of the value of the property.

Care must be exercised in fixing a management charge, as some managers supply their own office, their help, and their supplies, while others are furnished these facilities by the building itself.

Apartment houses require such a large and varying allowance for depreciation and maintenance that a standard multiplier of rents becomes more difficult than in the case of detached residences. The heat, water, janitor, elevator, telephone service, etc., vary with each apartment house. It must be evident, however, that gross allowances must be larger, that the net rental will be reduced, that the multiplier will be smaller than used for determining values of single houses. If 20 per cent gross charges should be allowed, as is used by some experts, then the monthly rental should be multiplied by 60. Example: Rentals of an apartment house are $750 per month, $9000 per year, gross allowances 20 per cent, net rentals $7200, is worth $45,000, determined by multiplying the monthly rental $750 by 60. If 24 per cent per annum is a proper allowance, or 2 per cent per month and the gross monthly rent is $750, the arithmetical question is stated thus: $750 equals 2 per cent of what figures? Answer $37,500 which sum is secured by multiplying $750 by 50. Tabulating the above illustration and data, the capital value of improved property is as follows with the following known monthly rental and given monthly allowances, with appropriate factors for multiplying the monthly rental:

| Monthly Rental | Yearly Allowances | Monthly Allowance | Multiplying Factor | Capital Value |
|---|---|---|---|---|
| $75 | 12% | 1 % | 100 | $7500 |
| 75 | 15% | 1 ¼ % | 80 | 6000 |
| 75 | 20% | 1 2/3% | 60 | 4500 |
| 75 | 24% | 2 % | 50 | 3750 |

Benson and North in "Real Estate Principles and Practices" give the following table of percentages of gross rentals to values:

| | Yearly | Monthly |
|---|---|---|
| Dwellings | 12% | 1% |
| Cold water flats | 12% to 15% | 1% to 1 1/12% |
| Steam heated flats | 15% to 20% | 1 1/4% to 1 2/3% |
| Elevator apartments | 18% to 25% | 1 1/2% to 2 1/12% |
| Loft buildings | 15% to 20% | 1 1/4% to 1 2/3% |
| Office buildings | 20% to 25% | 1 2/3% to 2 1/12% |

In other words, the multiplying annual factor in order to get 100 per cent is 8 for dwellings, as low as 5 for flats, and as low as 4 for elevator apartments and offices. When calculated on the monthly rental, this would involve a multiplier of about 100 for residences, 60 for flats and 50 for first-class apartments and offices.

In commenting on their table, they say:

"The amount of service given to the tenants must be considered in determining which rate to use for any particular building. It should also be noted whether the rents are likely to be maintained, or have been increased as the result of a temporary condition. It may be safer, in attempting to value some buildings on the basis of gross rental, to take, not the rents actually being received, but those which are recognized as the fair rents for similar space. Apartment buildings in a given locality may be worth on the average a rent of twenty dollars per room per month. If one particular house happens to be rented at thirty dollars per room it is likely that the owner has taken advantage of a temporary shortage of housing space to obtain an unusually large rent. Instances have been found in which a building has been filled up by giving special inducements to tenants to rent space in it. The necessity of care in capitalizing gross rents to get a value is apparent."

These gross rentals will bear some further discussion in the light of more recent experiences and data. It has been seen that residential overhead cost, including a fair investment return, is nearer 15 per cent at the present time than 12 per cent.

From an excellent report, prepared by Alfred Kennedy of Omaha, chairman of the apartment house exchange committee, made in the summer of 1923, relating to over 80 apartment houses in 15 American cities, it is noted that the average net return was 8.67 per cent without any charge for depreciation. The net return was 53.24 per cent of the gross, which shows therefore a gross income of about 16.28 per cent. It should be borne in mind that this percentage is figured on land and building values. Assuming that the building value represents two-thirds and the land one-third, having also in mind that in many cases the lot area is unnecessarily large and not fully occupied, it is evident that the expense of the building proper must be at least one-third greater or approximately 21.71 per cent. When this is applied, however, to a 100 per cent valuation instead of 75 per cent it will involve a total expense of about 16 per cent on the building value proper. In the light of detailed figures of expense, the following set-up of overhead expenses approximates the average yearly cost of such buildings based on capital cost.

| | |
|---|---|
| Maintenance and repairs | 3.00% |
| Depreciation | 3.00 |
| Insurance | .50 |
| Tax | 2.50 |
| Management | 1.00 |
| Interest | 7.00 (without profit) |
| Vacancies | 0.50 (6% on gross rents) |
| Total | 17.50 |

The National Association of Building Owners and Managers, in collecting the experiences of their respective office buildings, has done much in recent years to elucidate and classify various items of expenditure. The 1925 experience exchange report covering 147 buildings situated in the large cities of the

United States gives the percentages of particular classes of expenditure based on the owner's valuation of these properties. The tabulation is interesting as showing what the probable charges of structures may be for operation, maintenance, insurance and taxes.

OPERATING COSTS OF 147 OFFICE BUILDINGS IN 1925

| **Operation** | Percentage on Actual Valuation | | Cents Per Sq. Ft. | |
|---|---|---|---|---|
| A-1 Cleaning | 1.13% | | 20.6c | |
| 2 Electric System | .21 | | 3.9 | |
| 3 Heating and Ventilating | .41 | | 7.5 | |
| 4 Plumbing | .08 | | 1.4 | |
| 5 Elevators | .52 | | 9.4 | |
| 6 General Expense | .61 | | 11.1 | |
| 7 Power | .18 | | 3.2 | |
| Not Classified | .13 | | 2.2 | |
| Total | 3.27 | — 3.27 | 59.3 | — 59.3 |
| **Maintenance** | | | | |
| B-1 Alterations | .16 | | 2.9 | |
| 2 Building Repairs | .21 | | 3.9 | |
| 3 Decorating | .18 | | 3.2 | |
| Not Classified | .05 | | .8 | |
| Total | .60 | — .60 | 10.8 | — 10.8 |
| **Insurance and Taxes** | | | | |
| C-1a Insurance (fire) | .08 | | 1.4 | |
| 1b Insurance (all other) | .04 | | .7 | |
| 2a Property Taxes | 1.87 | | 33.8 | |
| 2b Pers. Prop. Assessments | .02 | | 0.5 | |
| 3 Depreciation | 1.21 | | 22.0 | |
| Total | 3.22 | — 3.22 | 58.5 | — 58.5 |
| Total Expense | | 7.08 | | 128.6 |
| Deductions and Net Income | | 5.25 | | 96.6 |
| Total Income | | 12.19% | | 223.7c |

From the above, it appears that the cost of operation of 147 office buildings in different cities of the United States was 3.27% of the actual value, .60% for maintenance, 3.22% for depreciation, insurance and taxes, property taxes being 1.87%, insurance .12%, depreciation 1.21%. It also appears that the total gross income was 12.39%. This is far different from estimated gross income of office buildings, hereinbefore assumed at 20 to 25%. It also shows that office buildings are generally making about 5.25%. It should be noted, however, that this set-up contains 1.21% for depreciation which is calculated on the entire value, land and improvements. Assuming the building to be worth about as much as the land (in many cases less) would involve a depreciation of 2.42%, which is certainly very ample in view of the known experience of well known buildings erected years ago. If 5.25% is the average net income of such buildings generally in the United States, then 5.25% is the proper capitalization rate of net earnings of office buildings, which would require a multiplier of 19 of the net earnings to arrive at the capital value.

Note also that the net income is about 40% of the gross, that taxes equal about one-third of the net profit, in other words, represent one-fourth of the net income plus taxes. Or put another way, they represent about one-seventh or 15% of the gross income. The report shows that the average office rentals for 1925 were $2.04, store rentals $3.51, and basement rentals 58c, each per square foot. The office vacancies were 6.19% of the rentable office area for 144 buildings.

In the rent control laws of New York the courts have been called upon to determine what constituted a fair return to the owner. The court held in Hirsch v. Weiner, 190 N. Y. S. 111 (1921), that a net return not in excess of 10% was not unreasonable. The court arrived at this percentage because first mortgage coupon bonds were yielding at that time (1921) 8 to 8½% in New York City. It was indicated, however, that the rate of return followed closely the value of money so that the net rate of return might drop as low as 6%. See Karrick v. Cantrill, 277 Fed. 578 (1922).

In Hirsch v. Weiner the court allowed an annual depreciation charge of 2%. However, in Hall Realty Co. v. Moose, 192 N. Y. S. 530 (1922), the court recognizes that any fixed percentage cannot properly be made applicable in every case. In Hirsch v. Weiner the following were held to be proper, allowable and operating expenses:

1. Payments for taxes, water rates, insurance, and janitor service;
2. Necessary legal expenses incurred by landlord incidental to maintaining his right to possession;
3. Necessary payments actually made for collecting rents;
4. Payments for necessary supplies incidental to the use of the premises;
5. Payment for necessary current repairs for the year;
6. Allowance for loss of rent by reason of vacancies or tenant failing to pay;
7. Allowance for annual depreciation, if established by proof.

Significant of the conflict in this field as to the proper allowance and deduction is the variations adopted by different departments of the United States. In a study by the United States Department of Agriculture entitled "Taxation of Farm Real Estate in Indiana," March, 1925, in deducting a capital value from net rentals, the department allowed a deduction of 3% for depreciation and repairs, insurance $1 per $100 for city dwellings, and twenty-four cents per $100 for farm dwellings for the year 1923.

Contrast this depreciation allowance with deductions allowed by the United States Internal Revenue Department in the administration of the federal income tax: 3% on brick buildings and 5% on frame buildings. The income tax primer of 1918 shows, in fact, that the average usable life of the frame building is 25 years, a brick building 35 years, buildings of steel and concrete 50 to 100 years. In the case involving apartment depreciation the jury found that 3% was a proper rate of depreciation. (See Cohen v. John C. Lowe Jr., 234 Fed. 274.) The foregoing pertained solely to the physical or structural depreciation. An obsolescence charge is also now permissible under income tax administration rulings.

The experience exchange of the members of the Apartment House Division of the National Association of Building Owners and Managers shows the percentage of gross income spent respectively for fuel, repairs, taxes and net income of 87 buildings as follows: 5.05%, 9.05%, 12.93%, 51.31%. The percentage of net return for 60 buildings on the owner's value was found to be 5.36%. Having these two figures before us, the net income, the gross income and the percent of the owner's value permits a transmutation of the fuel, repairs and tax charge based on the owner's value as follows: Fuel .5%, repairs .9%, taxes 1.3%, gross income 10.4%. It thus appears that even as to apartment houses a 12% gross will permit of a fair estimate of capital value. Thus we find that the usual method of considering a month's gross rental at 1% of the capital value, in other words, that the capital value is 100 times as much as a month's gross rental will apply as much to apartment houses as it does to detached residences or office buildings. While apartment house members of the National Association of Building Owners and Managers show that the total rental income was around 12% of the value of the property, it would seem as though the members were over-valuing their property. A 12% return does not admit of a sufficient charge-off for depreciation, it being well known that apartment houses undergo very heavy rates of depreciation structurally by reason of the hard usage and frequent changes in tenants as well as obsolescence by way of changes in arrangement of suites, character of services, location of the building and style of architecture.

In the opinion of the author, a 15% gross income will more nearly comport with the proper rate of capitalization of gross income of apartment houses, hotels and office buildings than will the rate of 12% reported to the National Association of Building Owners and Managers. Accordingly, a prominent student of land values appraised detached residences at 1% per month, apartment and office buildings at 1% per month plus 10%, while for two and four-family residences he deducts 10%. Thus, the gross monthly rental for a detached residence being $75, the value would be $7500. The gross monthly rental of an apartment or office building being $7500, the value would be $750,000 less 10% or $75,000, equals $675,000. In cases of two or four-family structures, where lessee pays heat, gas, water, etc., the rental being $150 per month the value, he figures, would be $15,000 plus 10%, or $1500 equals $16,500.

## CHAPTER 6

## STORE RENTALS

Necessary to standardize to a common basis—Land values deduced from store rentals—Economic rent capitalized—Capitalizing net rentals—The present market value the best basis for appraising.

As few stores are of equal or like width and length, in order to compare store rentals, it becomes necessary to reduce all rentals to a common basis, a standard one-foot front by 100 feet in depth; otherwise a comparison of rentals is impossible. It should be borne in mind that the front 10 feet of a store room 100 feet in depth are worth at least five times as much as the rear 10 feet of the same store, and that the front 25 feet are worth about four times as much as the rear 25 feet. Thus, a store room 1 ft. x 25 ft. may pay $5.00 per square foot, while the rear 25 feet would pay only about $1.25 per square foot. Yet such payments would be the same as $2.40 per square foot for a store room 1 ft. x 100 ft. in depth.

A recent report indicated that a store in the Englewood district of Chicago had been leased for a term of years at the average rate of $22.22 per square foot. It was a cigar store 9 x 30 and was leased at $450 per month the first five years and $550 for the second five years. Immediately one wonders how much this rental really represents and how it compares with known rentals in other cities. First determine the annual rent, namely, $450 per month × 12 equals $5400. Then find the rental for 1 foot, viz., $5400 divided by 9 equals $600. But we know that the front part of a lot is worth much more than the rear, that a lot 30 feet deep will rent for more per square foot than a lot 100 feet. Then take a standard depth of 100 feet. Under the Cleveland rule 30 feet represents 54 per cent of the standard lot, hence a standard lot 1 foot by 100 feet deep would lease for $600 divided by 54 equals $1666 or $16.66 per square foot.

Unless these factors are retained in mind, many shallow rental spaces on poor streets will appear to be paying much more than many deep rental spaces in the same neighborhood, or even in the highest class section of the city. Without consideration of this fact, a poor street may be proven to be the most valuable and the best the least valuable street in a down town section.

In order to arrive at the land value from a study of such rentals, it is necessary to secure an estimated cost of the building before standardizing the rentals. While the front part of a site is worth several times the value of the rear part of the same lot, this does not apply to the building which costs approximately the same per cubic foot, whether it be the first twenty-five feet or in the middle or even beyond the 100-foot standard.

It becomes necessary, therefore, to arrive at an approximate cost of the building in question, or of a standard building, then to deduct the overhead costs, such as maintenance, management, repairs, taxes, interest, etc. and capitalize the remainder to land value and then to reduce it to a standard. Such building costs vary with the height of the floors and the character of construction. Some high-class buildings cost from 50c to 75c per cubic foot and even more, while cheaper one-story store fronts and basements with hot air furnace may cost but 15c per cubic foot.

In the high-class building, the basement will be found to be perhaps ten feet high and more, while the first floor may be twenty feet high. The cheaper building may have a partial basement, eight feet high with floor and have a store twelve feet high. Taking a store 1 ft. x 100 ft. in dimensions, a large cost variation is shown. Taking the better building, a 10 ft. basement plus a 20 ft. store height, equals 30 feet high by 100 feet deep, equals 3000 cubic feet multiplied by 50c equals a cost of $1500 per standard foot of 1 foot by 100 feet in depth, or $2250 if the building costs 75c per cubic foot. Taking now a cheaper building of 8 feet basement and 12 feet store height at a 15c cost, a cost of $300 per standard foot is established. If the building is longer or shorter, a proportionate part must be taken. This estimate of a cubical contents building cost will be necessary whether the store building is a single complete unit, or merely a part of a large building.

It will next be necessary to arrive at a theoretical store rental value, unless the existing store rental may be taken as a standard. This process will not be necessary if the site value is to be deduced from the actual rental under an existing lease. But where the store room is not modern, or where it is an old lease and when a value is to be arrived at from rentals which might be secured at the present time, a present lease on a present standard of rentals in a suitable building must be assumed.

To arrive at the value of a particular site through an analysis of rentals requires, then, first, an examination of recent leases in the neighborhood, avoiding if possible corner rentals which necessarily must bring higher figures and be less comparable, except through a laborious and intricate calculating process; second, reduction to a standard lot, 1 ft. x 100 ft.; third, deduction of building investment costs; fourth, capitalization of the rentals remaining. If the rentals examined represent neighborhood stores of sites developed to their highest utility, a very close approximation of the site value will then be possible.

It must be remembered that store rentals paid by a tenant include taxes on land, as well as on that part of the building necessary to the tenant's use and occupancy, namely, the ground floor and basement. The rentals must be sufficient to cover outside repairs, insurance and depreciation of such part of the building specified. As the average building will ordinarily stand vacant during part of its life, an allowance therefor must be made. As banks and investors demand at least 7 per cent for loanable funds for building purposes on leased land and as the owner must have some prospective profit, let us say 1 per cent, 8 per cent of such a normal investment is a necessary charge. After deducting these necessary costs, the balance will represent rentals being paid by the tenant for the use of the site, which capitalized at the market rate of money as to such investment will produce the economic value of the land.

## ECONOMIC RENT CAPITALIZED

Let us assume a store in a medium priced building, representing an adequate adaptation to site, well leased to its best use, renting for $8000. The site leased is 150 feet deep, the store rented, outside measurement is 20 x 100 feet of a larger building, the neighborhood a well developed locality in a large city **which** *has no speculative value to reward it.* What land value is deducible from such rental? First determine the building value. In this case the part of the building leased is equivalent to a building twenty-five feet high (one-story fifteen feet and basement ten feet, calculated from the bottom of the basement floor to the second story floor) by 100 feet deep by 20 feet wide which equals 5000 cubic feet and multiplied by 50c per cubic foot equals $25,000 ($1250 for 1 ft. x 100 ft.). As the landlord supplies the building, pays for repairs, insurance, taxes, must bear depreciation, these overhead costs must be deducted. In fixing these overhead costs, we encounter great differences of opinion as heretofore expressed. However, we will use minimum estimates.

**Fixed Charges on a One-Story Building**

| | | |
|---|---|---|
| 6% | on Building Value $25,000 | $1500 |
| 2% | Depreciation | 500 |
| 3% | Taxes on 70% Assessment | 525 |
| 3% | Insurance, Repairs, Management, etc | 750 |
| | Total Fixed Charges | $3275 |
| 6% | Vacancy of $8000 Gross Rental | 480 |
| | Total Overhead Building Costs (about 2% of $25,000) | $3755 |

Deducting the $3755 building costs from the aggregate rental, namely, $8000, leaves $4245 as representing the land rental, which capitalized at 8.1%, 6% for investment and 2.1% land tax ($3.00 rate on a 70% assessment), equals $51,173, representing the land value of the lot 20 feet wide, or $2558 per running foot, or $2224 per standard foot.

In the above calculation, a 3 per cent tax rate has been assumed. This can be modified to suit local conditions. Likewise, the proportion of assessment to cost. The 3 per cent for insurance, repairs, management, etc., will be found to be a fair charge. The 6 per cent vacancy, measured on the full rentals, is not excessive. The Association of Building Owners and Managers of Detroit, likewise of Cleveland, found 10 per cent to more nearly represent the proportion of vacancies of office space in the year 1923.

The 3 per cent will require variation according to the character of structure and its use. The 6 per cent vacancy measured on full rentals is not excessive. The Associations of Building Owners and Managers of Detroit and Cleveland found 10 per cent to more nearly represent the proportion of vacancies of office space in the year 1923, while during the year 1926 it was greater. The tax rate on actual valuation of 175 buildings in the United States represented by the National Association of Building Owners and Managers reported an average rate of $1.87 per hundred.

Great variation may be found not only in the character of the structure but in the amount of space comprising a store. High-class structures cost from 50c to 75c and more per cubic foot, and run from 100 to 200 feet deep, sometimes even more. Such stores generally have high ceilings, perhaps 15 to 18 feet, with 10 to 12 foot basement. They frequently involve extra plumbing, toilet, water, janitor's services, elevator, side or rear alley entrance and other advantages not enjoyed by cheaper stores.

As the available rent decreases, investors find it necessary to curtail all along the line, providing less substantial structures, less ornamentation, less height for first floor or basement, curtailed services, and lessened facilities, until the cheapest class may represent a one-story frame structure 40 feet deep, with a gravel roof, perhaps even without a basement, and with no service whatsoever. It is necessary to observe that taxes, maintenance, insurance and depreciation all change with variations in kind and size of structure, hence the difficulty both of constructing a table of building costs per standard foot of so many different types or deducting a per standard foot building value for discovering the residual land value or of creating any multiplier of store rentals to arrive at land values.

The rate of capitalization, as usual, becomes the most important factor. Shall we capitalize at 6, 7 or 8 per cent in determining the proper rate? It is well to observe that office buildings represented by the National Association of Building Owners and Managers show a net income of about 5.05 per cent for 1924, while for 1925 the net rental income was about 5.25 per cent on the actual valuation of land and building.

During and after the Great War, courts were called upon under rent fixing, or limiting laws to decide what constitutes a proper return on apartment house investments. As a rule they refused to fix a definite rate of return, but they did in several instances hold that anything less than 6 per cent net was confiscation. (See Moore & Hill v. Marshall, 266 Fed. Rep. 990; Kennedy Bros. v. Sinclair, 287 Fed. Rep. 972.)

In arriving at a net return, it is proper to charge off for loss of rents and vacancies. If the average for a number of years is available that would undoubtedly give great weight. In the absence of such data, the experience of other buildings of the same type in the same neighborhood would be the next best testimony. Building owners and managers feel that 6 per cent of the gross rents realizable when the building is full, is not an exorbitant allowance. (Karrick v. Cantrill, 290 Fed. Rep. 321; Kennedy Bros. v. Sinclair, 287 Fed. Rep. 972.)

W. Edwin Blair, a leading operator and appraisal authority of the National Real Estate Journal, in July, 1924, stated that the gross rents of apartment buildings should be 14.28%, made up as follows: Taxes 2%, vacancies .83%, repairs .83%, insurance, water, etc., .04%, light in public halls, etc., .04%, janitor, watchman, telephone operator, scrub women, etc., .75%, management .50%, heat .70%, depreciation 2.59%, total 8.28% plus net income 6% equals 14.28%. It will be noticed that operating, maintenance, management and insurance and water total 2.86%.

As to residences, Mr. Blair usually appraises residence rentals by capitalizing at 11.5% of the gross, in other words, approximately the customary 1% per month, so that a rental of $75 per month would indicate a value of $7500.

The net profits of corporations in general may also be scrutinized for some light on the subject, for it is admitted that capital is ever on the alert to leave one field for any other affording greater profits, and that building profits must, in the long run, average with other business profits. The following, taken from data of the United States Chamber of Commerce, shows the percentages of gross receipts of all corporations in the United States for the years 1920 and 1923:

| | 1920 | 1923 | Construction Co. 1923 |
|---|---|---|---|
| Cost of goods | 63.93% | 61.93% | 68.12% |
| Compensation of officers | 2.96 | 2.17 | 4.19 |
| Interest paid | 2.40 | 2.75 | 1.22 |
| Depreciation, amortization and depletion | 2.12 | 2.62 | 1.79 |
| Miscellaneous expenses | 23.50 | 22.75 | 20.68 |
| Taxes other than federal excess profits and income taxes | 1.01 | 1.37 | 0.50 |
| Federal Excess profits and income taxes | 1.38 | 0.78 | 0.51 |
| Net profits after all taxes | 3.60 | 5.63 | 2.99 |

It will be noted from the above that the net profits after all taxes are paid accruing to all corporations in the United States for the year 1920 (an abnormal year) was 3.60%, while for 1923 the net profits were 5.63%.

Examining particularly the construction field, we find that the net profits after all taxes were paid was 2.99%, in other words, approximately 3%. It would seem, from this material, that corporations as a rule and on an average do not realize over 6%. It is well known, of course, that many corporations realize much more. On the other hand, almost 50 per cent of the corporations report a deficit under their federal income tax statements. It may, therefore, be regarded as exceedingly fair to use a 6 per cent basis for capitalizing the net income.

The foregoing discussion pertains to a procedure for discovering land value from store rentals. It should be noted, however, that the result will give the economic land value only and not the market value.

From the above, it becomes evident that the rule of thumb method of estimating land values from store rentals by multiplying the front foot or even standard foot rental by 8 or 10 is erroneous. From the gross annual rental per foot for land and building it is necessary to deduct the overhead building costs per foot, varying from $50 to $150 and capitalize the balance.

This might result in a factor of from 1 to 12, depending on conditions.

Noteworthy is the paragraph in the 1923 experience exchange report of the National Association of Building Owners and Managers, page 26, to the effect that the value of land is approximately sixteen times the value of the store rent. The report sets forth a method for determining proper store rentals as follows: "Take 6 per cent of the assessed value of the land as the amount which should be received from the entire first floor rent space of the building." In other words, the land value is about sixteen and two-thirds times the rental value. In the author's opinion, however, this factor of 16 is excessive and was probably made as a conservative factor by interested owners for the purpose of insuring adequate rentals.

In the 1923 experience exchange report of the National Association of Building Owners and Managers, store rentals are classified from which to deduce percentage of land value assessments as follows:

Store Rental equals 6% of Land Value assessment where it exceeds $6000.

Store Rental equals 10% of Land Value assessment where it is $2500.

Store Rental equals 19% of Land Value assessment where it is $1000.

As assessments were based on about 53.7% on land value we may deduce the following table of land value assessments, full land value, per cent store rentals to the former, per cent store rentals to the latter and proper multiplier in the respective cases. (See P. 25—1923.)

**Store Rentals**

Per Cent to Assessment, Also to Full Value

| No. Bldgs. | Assessed Land Value | Ratio Rental to Assessment | Multiplier Required | Approximate Full Land Value | Ratio Rental to Assessment | Multiplier Required |
|---|---|---|---|---|---|---|
| 9 | $7,500 (and over) | 6% | 16 | $10,875 | 4% | 25 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 9 | 4,500 | 7% | 14 | 6,525 | 5% | 20 |
| 15 | 2,500 | 10% | 10 | 3,625 | 7% | 14 |
| 17 | 1,000 | 19% | 5 | 1,450 | 13% | 8 |

The above table is taken from a study of a report of 91 buildings to the National Association of Building Owners and Managers and is taken from the 1923 experience table. The study was made by the association for the purpose of arriving at the percentage which the ground floor store buildings pay on land value assessments. While the number of buildings reporting was 91, the above table gives the data as to only 50 buildings, the remaining number of buildings having reported values at intermediate points.

The land value in the second column is the assessed value and the ratio in the third column expresses the relation store rentals bear to the assessed land value. This table then shows that as to land values exceeding $7500 the store rentals are approximately 6 per cent of such assessed value. In other words, a multiplier of 16 is necessary in order to arrive at a proper assessable land value. Where the assessed land value is $1000, it will be noted that the store rentals average much higher—in fact, 19 per cent of the assessed land value. In other words, a multiplier of 5 applied to the store rental will indicate the assessed land value.

It should be noted in the above paragraph that the continual expression is "assessed land value." In view of the fact that the assessments for that year were approximately 68 per cent of the full valuation, it will be necessary to make some modification of the data based on the assessed value in order to get the ratio on a full value and the various multipliers resulting therefrom. Accordingly, the approximate full land value is given in the fifth column. The ratio of the rentals to such full land value and the multiplier required to arrive at the full land value are given in the next two columns, the full land value being assumed to be approximately 45 per cent greater than the land value, the 45 per cent being obtained on the assumption that the assessed land value averages about 68 per cent of the full value.

Up to this point we have been considering the method of arriving at land values where the store rentals are known. The question frequently arises as to how store rentals may be proven. For instance, in an action by a landlord against a tenant, occupied upon an uncertain tenure, when suit is brought to recover for use and occupation for the time occupied, the primary question is what was the fair rental value of the premises as occupied under all the circumstances of the case. Can the fair rental value be deduced from testimony as to the value of the real estate? In Cahoon et al. v. Kinneon, 46 O. S. 590, it was held that evidence of the value of the real estate itself is not competent as bearing upon the question of rental value and that the evidence had to be confined to the fair rental value of the premises. Of course, this decision is good logic, as it is known that real estate, especially of a speculative nature, often does not produce sufficient rental for a short period of time to justify the existing sales prices.

In the foregoing was considered methods for arriving at the economic value of land when the building was adequate for the best use of the site. Frequently the site is there, but a building suitable to the needs of the community is not there. How in such a case can land value be arrived at through a capitalization of rentals? This cannot be done unless one arrives at a reproductive building value less depreciation for age, obsolescence, lack of suitability of the structure to the needs of the neighborhood, etc. This is a difficult matter, calling for the best efforts of experts.

For almost a century Euclid Avenue in Cleveland was one of the most exclusive residential streets in the United States. Residences costing from $100,000 to $600,000 were erected up to the year 1910. This street, in the section referred to, is now selling for commercial purposes for from $1000 to $3000 per front foot. Residence buildings are practically worthless, since the values given contemplate use of the land for commercial purposes. However, as a site with a building on it is worth more as a taxpayer than a vacant site, pending development, such building should be appraised at a nominal value, perhaps a year's rental.

The above refers to a growing section, changing from one use to another. How about the many down town and other retail streets where buildings are not entirely obsolete? Can land values be arrived at through a capitalization of net rentals? Manifestly not. Since the site is not adequately improved, the actual rentals will be no criterion, either to arrive at a land or building value.

On the other hand, may the building value be secured through a capitalization of the net rentals? Again and for the same reason one is unable to deduce a building value from the actual rentals. But if one could determine the land value from sales, leases, comparison with other rentals, by deducting the land rentals from the gross rentals, one would ascertain a net rental which could be capitalized into the value of the partially obsolete structure.

It is, therefore, manifest that to deduce value of a particular site or building, one must have the value of the building to get the site value, the value of the site to get the building value, or ideal rentals to get either land or building value therefrom. Of course, it is possible to ascertain the worth of a particular site or building or both "to the owner" from a given amount of rentals. But this is of rare concern, as the owner must charge himself not with actual rent but with possible realizable rent from the public for its best use. The difference he could secure in a sale of the premises.

## VALUATION THROUGH CAPITALIZATION OF NET RENTALS

When a site is improved to its best use, will a capitalization of the net rentals correctly appraise the land and building, as so many writers contend? Evidently not. Experience shows that many properties are improperly managed or, on the other hand, well managed. Many investments, poorly managed, prove profitable in the hands of a wide-awake operator. Others are so managed that the last possible dollar is earned. As to poorly managed property, an abatement is frequently sought; but assessors have also had requests not to value on earnings because of the excellent management and abnormal profits. The property must be charged with normal costs and credited with normal rentals which will then be capitalized into proper value. Even so, structures are frequently erected in rapidly growing districts and cities far ahead of their need. A capitalization then of the present earnings takes no consideration of the future earnings relied on by the investor. The capitalization value solely through a consideration of present rentals is inadequate.

Under such circumstances, some writers project a line of increasing rentals to produce the value anticipated by the building or investing promoter. They contend that a proper appraisal of real estate involves a correct assumption as to the future utilization of parcels of land and that an appraisal thereof must involve not only an appraisal of today's value, but that an additional value must be added based on the tendency of the market in the past. In other words, if land values (and building values) increased 50 per cent during the last ten years it follows, so they say, that a correct appraisal today must show a like addition for the next ten years to today's value. The statement of the procedure in the light of recent experience is enough to condemn it. For the same reason, if land values should have declined 30 per cent from the 1924 high peak of speculation to the year of 1927, it would be necessary to reduce the present level of prices a further 30 per cent!

There is only one way to appraise land values. Not by speculating as to the future, but by finding the present market value, influenced as that is by thousands of potential investors, ready to buy or sell for good, bad or indifferent reasons, balanced by the availability of credit, and by business and investment conditions. The realm of speculation for a rise or fall is outside the sphere of the scientific appraiser.

The price comparison basis, instead of being the poorest method of checking a value, is the primary method. Of course, an appraiser must invoke every method for checking his appraisal. Net income, leasehold value, fee sale value, reproduction building less depreciation value, cost value, capitalization of present worth of rentals, comparisons with recent simiiar property sales, asking prices—these things, of course, all should be known and considered. For any appraisal made without considering every available source of information depreciates the value of the appraisal. Most investors rely on simple patent facts, rather than secret processes, rely on what other similar property has sold for, rely on easily provable, comprehendible and discernible facts—these things which so largely control the stock market, more largely fix the real estate market. Few people care for the intrinsic value (if there be such) of real estate or shares of stock or other property. They think rather of their investments from a market and earning standpoint. And whatever the intrinsic, future, potential or real value may be is immaterial in the realm of economies and prices. What it will bring, no matter how ignorant the buying public may be, is the sole consideration to 95 per cent of the owners of property.

As to vacant property, the recent sales price of similar lands is the best criterion of value. As to improved property, the like standard of price comparison will prove the best measure. When this is procured with difficulty, as in the case of office buildings, department stores or other properties seldom dealt in, one must rely on discovery, first, of the value of the land in comparison; second, of the value of the building on a reproductive cost, less depreciation, structural and obsolescent, when the building is improved to its highest and best use; third, of a capitalization of the earnings of the property; fourth, the market value of securities, for example, land trust certificates, or capitalization of given rentals, mortgage bonds, leasehold bonds, and capitalization of net earnings, as the case may be.

In the case of single purpose utilities, such as big league baseball properties, public utilities and other monopolistic or quasi-monopolistic properties, the capitalization of the earnings compared with the market value of its stocks and bonds will be found to be the best, in many cases, the only available or reliable measure of the value of the properties in the aggregate. The value of the integral parts of such systems is pure conjecture. It will be borne in mind that we are here dealing with the value of the entire estate. (See Adams Express Co. case, Supreme Court of U. S., 166 U. S. 185.)

## CHAPTER 7

# SALES, BUILDING PERMITS AND REVENUE STAMPS AS EVIDENCES OF VALUE

Neighborhood sales are extremely useful—How wide an area to study—Building permits of questionable value, as they cannot be reconciled—Revenue stamps, when used, gave little help in reaching correct conclusions.

In making land appraisals, the following is the usual classification and order of study made by the appraiser: Inspection and general study, sales of real estate, tax assessments, rentals, value of opinions of land dealers, value of opinions of land owners, character of buildings as an index to land values, and real estate for sale. The best evidence of value, of course, is neighborhood sales which have been consummated. This matter has so well been considered by McMichael and Bingham in "City Growth and Values" (1923) that liberty is taken to quote their analysis of this subject:

"The problem of analyzing sales to discover market value is somewhat simplified if, in the district where the land is located, land values are relatively stable. Then an appraiser may use sales of nearby lands as criteria of value. If, however, speculative conditions exist, he must also weigh the relative change in value of lands used for the same purpose even if differing considerably in location and quality and not be guided entirely by sales in the immediate neighborhood.

"Scattered sales do not represent stable market prices as a general rule. Often sellers forced to sell are discouraged in holding their property or are influenced to sell for reasons which should not and do not fundamentally control values. Likewise a purchaser may pay more than a tract of land is worth because of some reason which makes the parcel of particular interest or value to him.

"Sales are frequent when values are fluctuating rapidly and a speculative market condition exists. This fact tends to keep the price fairly well marked. When sales are rare, values are somewhat more stable and normal and in the absence of sales to indicate the market, the appraiser must seek evidence of value from rentals and income to assist in the valuation.

"Investigation of sales comes next in order. In analyzing sales it is necessary to weigh each transaction before accepting it as a criterion of value. *In an active market with many sales occuring, transactions covering not to exceed the period of a year should be given consideration. Sometimes an examination over only a few months will be sufficient. Where transfers are infrequent then perhaps an examination should cover the period of two or three years.* Occasionally it is necessary to consider sales beyond that time. Asking price is rarely a criterion of value.

"The area reviewed should compare as nearly as possible in character with the land to be appraised. In business districts it is usually sufficient to consider only transfers of properties upon the same street and within a few hundred feet of the property in question. Sometimes like or similar tracts upon different streets may be compared in order to ascertain values. Where corners are involved often the appraiser is required to compare corners of similar nature some distance from the parcel under consideration.

"In cities where long-term leases have come into extensive use, it is proper for the appraiser to examine the lease terms on tracts within the area under consideration where the transactions are not too remote in time. Leases upon business property are sometimes made upon a basis of from ten to fifteen per cent higher than the property would sell for upon the market for cash, so that allowance should be made for this differential in value, if present. Where a lease is being appraised a careful examination of its terms must be made in order to ascertain conditions which may influence the rentals paid. If restrictive covenants are found they must be carefully analyzed before the lease can be appraised.

"In valuing industrial properties, sales may be considered within a wider area than a few hundred feet from the property in point. The nature of manufacturing land is different from commercial frontage. Display frontage is comparatively unimportant. Size and location with reference to railroads, labor supply, and the like, is of more moment. The only limitation upon the area within which sales should be considered, is marked by the inquiry as to whether the land is similar in nature and has been transferred within a space of time not so remote as to fall within a period when conditions governing the market were essentially different.

"An analysis of sales of residential properties must cover a much wider area than when business frontage is under consideration. Lots located upon streets many hundreds of feet away may properly be compared when they are similar in character and so situated as to be of like nature.

"Minor influences, such as traffic conditions, restrictions, transportation facilities and the like must be studied by the conscientious appraiser before reaching his valuation of any given tract of land. The general reputation of the district bears a pronounced relation to value. Particularly is this true in residential properties. Some streets are considered fashionable and lots located thereon attain higher value and bring better prices than they ordinarily would sell for in another district. In business areas certain districts bear the reputations of being cheap.

"In analyzing transactions, forced sales, and those which are merely transfers within a family or personal group of investors, have little significance in fixing market value. Where a property is 'knocked down' at sheriff's sale it is clear that so many elements of uncertainty enter into the transaction that it can not be considered a free sale occurring between a seller ready, willing and able to sell and a buyer ready, willing and able to buy, neither of whom are coerced into the transaction. Likewise transfers made through condemnation proceedings or under threat of condemnation are not adequate indications of value.

"The ultimate factor in determining the value of a given piece of land is the seasoned judgment of the appraiser. His valuation is good or bad in proportion to his ability to exercise sound judgment in weighing the various factors of value which exist in land. No rigid rules can be laid down for the appraisal of land which will dispense with the sound individual judgment of the person making the valuation. Rules and methods can only be guides, sales can never be more than sign posts to mark the way towards a correct conclusion. Land valuation is not an exact science—it is a profession excelled in only after years of intensive study and wide experience."

State tax commissions are called upon in most states to equalize real estate values in their respective counties to a 100 per cent basis, to the end that property in one county shall bear the same relative share of the state tax rate as property of similar actual value in other counties. This involves examination of thousands of sales. The Tax Commission of the State of New York in its equalization capacity "excludes from all consideration transfers of property between relatives or persons of the same surname, sales by referee, either in partition of foreclosure action, all foreclosure sales, sales where sales are deemed to be shoestring sales, i. e., where the equity is small, sales where a purchase money mortgage is given back and which represents very nearly the purchase price, sales between corporations for the purpose of consolidation, sales where the assessed valuation is entirely out of line with other assessments on the same roll, which indicates something peculiar in the transaction, and sales where a personal investigation by the department's investigators are such as to not represent fair values."

## BUILDING PERMITS AS EVIDENCES OF VALUE

Frequently the question arises as to whether cost estimates given by an applicant at the time of application for a building permit are a proper basis for assessments. Such data cannot be regarded as worthy of credibility or evidence of the value of the structure. A little reflection will show why such estimates possess very little statistical worth.

A truthful applicant having taken figures from a contractor for the building of his home, will make a reliable estimate. However, such cases are very rare. Many reported values of contractors are founded on either wrong or insufficient premises.

For example, a contractor who frequently applies for a permit and who does but part of the work frequently gives his contract price as the value of the entire structure.

Some owners who have not taken bids, are misled by their wishes or hopes, and will, without intending to misrepresent. give the inspection department a low value. Some owners use architects' estimates. These are naturally low, as they, too. reflect the owner's hopes and wishes. Some think the reported value will be accepted by the assessor as a proper taxable value and therefore give a low estimate.

Frequently builders about to apply for a loan from a bank and who give high probable costs, think it wise to continue the deception when taking the permit, as the figures will be published in the newspapers. Some give a high estimate with the thought that such a building permit estimate will influence the buyer to pay a higher price. In the case of a theatre recently built, the building permit estimate was $2,000,000, while the newspapers reported the intended outlay as $5,000,000. An architect taking a permit for a steel company recently gave $10,000 as the probable cost. The building inspector asked the city assessor for his opinion. He estimated that $30,000 would be nearer the truth. The architect, confronted with this estimate, admitted that $25,000 to $30,000 would be more correct, but said the owners had told him to give to the building inspector an estimated cost of $10,000. These cases show the utter unreliability of estimated costs of buildings given to the building inspector.

The conscientious, fair-minded appraiser will give very little heed to such building permit values. Assessments on such a basis would be irreconcilable with each other, causing the greatest confusion and annoyance to both assessor and property owner and would involve complaints, changes, and adjustment without number. If assessors generally gave out the statement that building permit cost estimates would not in any event be considered, many of the fictitious estimates of the probable cost given to the inspection departments of large cities and villages would be avoided. Property owners should know that a very low estimate is greater cause for suspicion and investigation than a moderately big one, and therefore invites a substantial increase in assessment.

Every city should maintain a building inspection department, where a permit should be secured both for the erection and the removal of a building. Only in this manner can the assessor place on the duplicate the value of all new structures. As to structures removed, the assessor should exercise care and diligence to the end that such destroyed or removed buildings are not again taxed, involving later application for abatements, remitters or refunders, generally through tax experts who demand 50 per cent for any tax recovered. Not that such service is not legitimate, but that it is liable to lead to collusion and corruption and a loss of prestige of the assessor's office. The public expects abatements and refunders from the assessor's office as a matter of right and not as a matter of favor.

## REVENUE STAMPS AS EVIDENCE OF VALUE

For a number of years there has been an insistent demand by assessing officials that deeds should show the real consideration rather than a merely nominal consideration. For a number of years the federal government required the affixing of 50c revenue stamps for each $500 of selling price or part thereof, exclusive of mortgages thereon. In other words, a deed for property worth $500 required 50c of revenue stamps, while property worth $750 required $1.00 of stamps. Taxing officials and real estate appraisers grasped at this evidence of value with avidity. At last some light was thrown on real values. But this evidence proves to be very unsatisfactory. Without examination of the facts underlying each transaction, especially in large cities where high finance methods, intense speculation, fictitious transfers, wash sales, etc., prevail to such a large extent, the evidence was misleading. The state board of equalization of California made an intense and interesting study of the reliability of revenue stamps as an evidence of value. Its conclusions were as follows:

"This source of information was found of little value, for the reason that it early became apparent that the revenue stamps attached are not a reliable index of the consideration realized in the sale, for the reason:

First—That it quite frequently happens that additional stamps are attached by buyers for speculation for the purpose of showing the prospective purchaser to whom they afterward attempt to sell the same property, a cost price to themselves which compares favorably with the price being asked.

Second—The law requiring that revenue stamps be placed upon deeds recites that a 50-cent stamp shall be attached for each $500 selling price represented, or portion thereof. It follows that in small sales a deed showing two 50-cent stamps may represent a consideration of $550 or $1000, a variation of almost 100 per cent. Of course, this percentage would be less as the amount of the sale increased until in the very large sales the percentage would become negligible but, taking the average consideration in all deeds filed over the state for a given day or period, the percentage of variation is so large as to render the data valueless, and eliminating all of the smaller deeds to avoid this objection would be manifestly unfair, as practically only one class of properties, the very expensive, would be represented in the survey.

Third—Many deeds evidence transfers representing the exchange of one property for another, rather than the sale of property for cash or for terms on a cash basis, and it is the rule, rather than the exception in such cases, that the parties to the transactions both put a price upon their properties for exchange purposes much in excess of what they would be willing to take for cash, oftentimes double the cash price; the exchange being made by investigation of the two properties by the prospective purchasers and the deed showing the inflated exchange price. An attempt to eliminate these transactions is ineffective because while some of them indicate upon the evidence of transfer that an exchange of property is being made, a large percentage of them do not evidence the fact that such is true or that they are other than a bona fide sale.

Fourth—Since the law requires that stamps be attached to show only that portion of the selling price remaining after the encumbrance deduction, in all of those cases where mortgages are of record against the properties being sold, it becomes necessary to add to the selling price indicated by the stamps attached the value of the mortgage. And as mortgage records do not show partial payments upon such mortgages, it follows that taking the face value of the mortgage as shown by the record very frequently shows a much larger amount than remained unpaid on such mortgage, which the purchaser assumed, with the result that the aggregate of the selling price indicated by stamps, plus the mortgage, would show a consideration much in excess of that received."

That knowledge of value derived solely from the amount of revenue stamps is not dependable and consequently not admissible in evidence was ruled in the case of Aspegren v. Tax Assessors of City of Newport, 125 Atl. 213, as follows: In resisting an assessment of his real estate as excessive, a Rhode Island taxpayer showed that his sworn statement filed with the assessors included a value based upon the cost of the property to him plus the cost of subsequent improvements. It appeared that the property had been upon the market for ten years and that the taxpayer had purchased it shortly before the assessment was made. Evidence as to four sales of similar property near by was given by the brokers who handled the transactions and it was sought to prove the consideration involved in other sales, by showing the amount of federal revenue stamps attached to the deeds. The court held that the evidence was sufficient to justify a reduction in the assessment to the amount claimed. It also held that evidence purporting to show the consideration involved in certain sales by reference to the federal revenue stamps used was inadmissible.

The New York State Tax Commission is very discriminating in the use of sales prices in equalization of inter-county values. For purposes of equalizing assessments within the state it investigated, during the years 1920 to 1924, 133,686 sales of real estate. Of this number, it excluded 17,408 sales as not being worthy of use in its tabulations. The State Tax Commission commented on this as follows: "There is eliminated from all consideration in arriving at the equalization table the sales of unimproved property, sales between relatives or persons of the same surname, sales by referee, either in foreclosure or partition actions, all auction sales, sales by executors, sales where trades enter into the consideration, sales from one corporation to another for the purpose of consolidation, sales of hotel properties, and sales where the assessed valuation is entirely out of line with the general rate of assessment in the tax district."

It should be particularly noted that equalization tables do not refer to vacant property. This, indeed, is rather peculiar, for a better perspective of assessments is obtained from land sales than from improved property sales.

The foregoing indicates quite conclusively the inadequacy of this sort of evidence. Particularly in cities are found wash sales effected to fool the appraiser, to mislead the prospective buyer and to confuse the banker or building and loan company into a higher loan. The careful appraiser should check up such information by inquiry not only of the buyer but also of the seller.

Another evidence of value much relied upon where long-time leases are in use, is the private appraisal supporting a bond issue of the leasehold estate. Such appraisals will sometimes be found to be excessive and made sufficiently high by unscrupulous appraisers so as to make prospective bond issues to the extent of 60 per cent thereof perfectly safe investments.

And trust certificates, or certificates of equitable ownership are generally floated on the representation that the land value equals the value of the certificates. Indeed, in many states, as in Ohio, relating to the eligibility of land trust certificates for the investment of trust funds and savings banks, the law provides: "The total value of these certificates must not exceed, as to any particular issue, the value of the land, nor of 60 per cent of the total value of the land and the improvements thereon. Nor may such institutions invest in such certificates unless the lands are under lease for a period of not less than twenty-five years from the date of issue."

Under such circumstances, it will be seen that the issuing company generally represents the land trust certificates being worth, in the aggregate, the value of the land, or two-thirds the value of the land plus improvements.

## CHAPTER 8

## WHAT RENTALS CAN A MERCHANT AFFORD?

Percentages of gross sales payable as rent—A difficult system—Results of many investigations—Rents vary according to the size of a city—Different businesses compared.

In real estate journals from time to time there appear statements as to what rentals different kinds of business can afford to pay, measured by the gross sales of each business. There is an increasing tendency, especially in pioneering sections of a city for landlords to take a chance with the tenant and the tenant to take a chance on prospective business by fixing the rent in proportion to the gross sales. In such instances a consideration of the rental the tenant can afford to pay is based on a percentage of gross sales.

Stanley L. McMichael in his excellent "Long and Short Term Leaseholds" treats this subject at some length: "After long experience chain store brokers have worked out a schedule of maximum percentages of rents to gross sales which such concerns can afford to pay. These have not been completely standardized, and differ slightly under varying conditions, but twenty-eight lines of business average as follows:

### Percentages of Gross Sales Payable as Rent

| | | | |
|---|---|---|---|
| Restaurants | 12% | Cigars | 8% |
| Millinery | 12% | Shoes | 8% |
| Barber Shops | 12% | Hotels | 8% |
| Florists | 12% | Theaters | 8% |
| Auto Accessories | 10% | Women's Suits | 8% |
| Drugs | 10% | Jewelry | 8% |
| Women's Waists | 10% | Five and Ten Cent Stores | 8% |
| Electrical Goods | 10% | Trunks and Leathergoods | 8% |
| Furniture, Rugs, etc. | 10% | Candy | 7% |
| Haberdashers | 10% | Pianos and Phonographs | 6% |
| Furs | 10% | Men's Clothing | 5% |
| Groceries and Provisions | 10% | Teas and Coffee | 3% |
| Hardware | 9% | Department Stores | 2½% |
| Credit Clothing | 8% | Automobiles | 2% |

"A change has taken place to some extent in the percentage rentals which chain stores will pay. Nationally advertised products are now sold at a smaller margin of profit than formerly and the fancy rentals which such stores would pay a few years ago are now being curtailed. Products which are more or less of a monopolistic character, where profits are correspondingly higher, will pay more liberal rentals than where nationally advertised goods are sold."

A rather unusual rental and the only one of its kind known is one reported to have been made in Kansas City by a banking corporation, whereby it took a lease on the ground floor of a building, agreeing to pay an annual rent equal to three-tenths of 1 per cent of the bank's gross deposits. This would be found to be a very excessive rental in many cases and yet an inadequate one in others.

In this connection also it is interesting to note the comment of one of the rental managers for a chain store business to the effect that 13 per cent of the women passing will enter the store, 6 per cent will buy and the average purchase will be 60 cents. Multiplying this approximation of the average day's business, as shown by a pedestrian count, by the year's shopping days and taking 5 per cent of that total, gives the maximum sum that chain system will pay for yearly rent in the locality under consideration. The old free and easy system of blindly guessing at rental values is rapidly disappearing before more scientific methods of determining these values.

Too much reliance must not be placed on such figures, however. In the first place, merchants will not always pay what they can afford. Second, a rental which one merchant can afford would bankrupt another, even in the same location. Third, one merchant advertises, another does not, which involves quicker turnovers. Fourth, one merchant is willing to accept a smaller profit than another. Fifth, a business frequently may not be clearly defined as one or another. A drug store may sell sundries, candies, cigars, while a restaurant may be largely a candy, cigar and ice cream establishment. Sixth, the rental capacity of merchants varies in large cities as compared with smaller cities. Seventh, the business may represent an exclusive trade with high-grade equipment, costly furniture, etc., big profits and slow turnover. On the other hand, the sales may be made with cheap overhead, rapid turnover and small profits; or it may represent installment sales on credit, involving large costs of collection and leases.

The human factor, the character and efficiency of the organization, the energy of the manager, the supply of capital, the progressiveness of the business, the care of credits and collections, the assimilation of modern ideas and functions—in short, there are a multitude of factors fixing the merchant's capacity to pay rent. In each city, in each location, the question of proper rental based on a percentage of sales becomes an individual and peculiar factor for special consideration.

The Board of Business Research, School of Commerce, Northwestern University, made an investigation of the retail clothing business as to the average rent expenditures per total gross sales from 1914 to 1919 and came to some interesting conclusions, which show the impropriety of adopting any percentage basis on gross sales which a merchant can afford to pay as a store rental. The investigation came to the following conclusion:

> "The average yearly rent expenditure per $100 of total sales decreased between 1914 and 1919. The larger the store, the smaller the rent expenditure per $100 of total net sales. This is true for each of the years 1919, 1918 and 1914, both for a varying number of stores and for the same stores. Stores in large cities pay more rent per $100 of total sales than stores in small cities. This is not only true for stores of all sizes, but for stores of the same size. The difference in amount of rent per $100 of total net sales between stores of different size is markedly greater in large than in small cities."
>
> "The relation of average yearly expenditures for rent to total expenses may be briefly summarized as follows: Rent expenditure per $100 of total expense decreased between 1914 and 1919. This is true for

> stores of all sizes and for stores in all of the geographical divisions. The larger the store, the smaller the rent expenditure per $100 of total expense. Rent expenditures per $100 of total expense are higher in the east and west than in other geographical divisions."

The bureau of business research of Harvard University recently made a study of operating costs of retail shoe stores. As compared with the stereotyped statement that retail shoe merchants "can afford to pay 8 per cent of their gross sales" as rental, it found that 232 firms were paying an actual rental of 2.8 per cent in 1921 and 3.2 per cent in 1922 based on their net sales. Another interesting fact revealed was that rentals paid by shoe merchants based on the gross sales increase with the size of the city. The following table shows that rentals ranged from 2.6 per cent in 1922 to 4.4 per cent according to the size of the city:

| Size of City | Number of Firms | Rent (Percentage of Sales) |
|---|---|---|
| Less than 50,000 | 266 | 2.6% |
| 50,000 to 99,000 | 42 | 3.6 |
| 100,000-499,000 | 59 | 4.1 |
| 500,000 and over | 54 | 4.4 |

The same bureau surveyed 421 retail shoe stores in the year 1922 with the following results:

**Retail Shoe Stores**

| Sales Annually | No. of Stores | % Rent to Net Sales |
|---|---|---|
| (A) Less than $30,000 | 101 | 3.3% |
| (B) $30,000 to $49,000 | 102 | 2.9 |
| (C) $50,000 to $99,000 | 105 | 3.0 |
| (D) $100,000 to $249,000 | 67 | 3.9 |
| (E) $250,000 and over | 46 | 3.9 |

The bureau further reported that of the 421 shoe firms reporting, only 59 had rent up to 6 per cent or more of net sales and only 39 had rentals ranging from 5 to 9 per cent of sales. At the other end of the range, 157 firms had a rent expense less than 2.6 per cent of gross sales.

The bureau of business research of Northwestern University and the Department of Agriculture, in co-operation with meat retailers and packers, made a study of 143 representative meat stores. The average rental for these stores was found to be 2.2 per cent of gross sales. The most characteristic amounts range from 1.5 per cent to 2.25 per cent and the middle 50 per cent of the amounts vary between 1.2 per cent and 3.4 per cent. The rent decreases in proportion of sales as the size of the shop increases up to a certain point, then begins to increase, as indicated below.

**Rental Averages for Meat Shops**

| | Average Percentage | Com. Amt. Percentage |
|---|---|---|
| One-man shop ............ | 3.5 | 2.6 to 4. |
| Two-man shop ............ | 2.6 | 1.6 to 3.3 |
| Three-man shop ........... | 1.4 | 0.9 to 1.7 |
| Four-man shop and higher. | 1.7 | 1.2 to 2.2 |

The Harvard bureau of business research in its 1924 study of operating expense found that the rentals for 168 department stores were 3 per cent of net sales. It was found that in the case of department stores with sales of $1,000,000 to $3,999,000, the rent was 2.9 per cent; those with sales of $4,000,000 to $9,999,000, the rent was 3.0 per cent; those with sales of $10,000,000 and over, the rent was 3.5 per cent. These figures indicate that in the case of department stores the rents increase with an increase in the volume of sales. The Harvard figures indicate, also, that the rents are highest where the rate of stock-turn is lowest; yet the rental goes up when the stock turns more than four times; thus, for 50 department stores whose rate of turnover was less than three times, the rent was 3.2 per cent; for 67 stores whose rate of turnover was from three to 3.9, the rent was 2.9 per cent; while 49 department stores with a turnover of four times and above had rentals of 2.9 per cent.

It appears, also, that the rent based on net sales increases with the size of the cities as follows:

RENT ACCORDING TO SIZE OF CITY

Department Stores with Net Sales of $1,000,000 and Over in 1924

Net Sales=100%

| Population | No. of Firms | Rent |
|---|---|---|
| Less than 50,000................ | 24 | 2.3% |

| | | |
|---|---|---|
| 50,000-99,000 | 35 | 2.9 |
| 100,000-399,000 | 69 | 3.1 |
| 400,000 and over | 40 | 3.4 |

The Bureau collected cost figures for 471 grocery stores located in 45 states and Canada. These figures indicate that the rent was greatly affected by the rate of stock-turn. It is not necessary to carry so large a stock of merchandise to secure the same volume of sales when the rate of turnover is high. The reduction in the stock leads to a lower space cost or rental. It is obvious that a high rate of stock-turn may indicate efficient management as well as good location. The common figure for the 471 stores was 1.2% for the stores that showed a profit, and 1.6% for the stores that showed no profit or a loss.

The bureau of business research, Northwestern University, made a study of the sales and rent of 981 retail men's clothing stores showing the following percentages of rent to total sales, to-wit:

| Size of City | Percent Rent to Total Sales |
|---|---|
| Under 10,000 | 1.8% |
| 10,000 to 20,000 | 2.2 |
| 20,000 to 40,000 | 2.5 |
| 40,000 to 120,000 | 3.4 |
| 120,000 to 200,000 | 3.5 |
| 200,000 and over | 2.8 |

The bureau of business research, Harvard university, surveyed 291 retail drug stores in 1919. In these cases the rent represented from 0.8% to 11% of the total net sales and a common figure was 2.8% of the net sales. The rent expense was greater in the larger cities than in the smaller ones, the smaller cities showing approximately 2.2% while in the larger communities it represented approximately 3%.

Of the jewelry stores reporting to the bureau for various years, the following net percentages to the net sales were found:

| | |
|---|---|
| 1919 | 3.7% |
| 1920 | 4.0 |
| 1921 | 5.8 |
| 1922 | 4.8 |

The figures for 1922 showed a wide range, from less than 2% to above 12%. The grouping was fairly well defined, however, around the common figure of 4.8%.

The average rent of 315 printing establishments reporting to the bureau was 2.91% of the volume of sales.

Retail hardware stores, studied for the year 1919 by the bureau, showed a rent expense of 1.7% of net sales.

Comparing the latest common figures for wholesale trades reporting to the bureau of business research, Harvard University, with the latest common figures for retail trades, the following percentages of rent were paid by businesses reporting the net sales really representing gross sales less goods returned and less allowances made on goods not returned, as follows:

| Business | Per Cent of Sales | Business | Per Cent of Sales |
|---|---|---|---|
| Grocery | 0.5 | Shoe | 3.5 |
| Dry Goods | 0.7 | Tire | 3.0 |
| Drug | 0.75 | Grocery | 1.3 |
| Automotive Equipment | 1.2 | Jewelry | 4.8 |

The University of Nebraska surveyed a number of different kinds of retail stores as to rentals and sales. These figures might serve very well as standards for stores of like kind and location in the state, because they have been classified so as to include rather homogeneous groups. Net sales 100%:

| No. | Kind of Stores | Location | Lowest | Highest | Common |
|---|---|---|---|---|---|
| 16 | Grocery stores | in Omaha and Lincoln | 0.8 | 3.68 | 1.34 |
| 19 | Grocery stores | outside Omaha and Lincoln | 0.7 | 2.31 | 1.19 |
| 10 | Shoe stores | in Omaha and Lincoln | 2.02 | 10.61 | 4.49 |
| 22 | Shoe stores | outside Omaha and Lincoln | 1.25 | 10.58 | 2.97 |
| 13 | Hardware stores | in Omaha and Lincoln | 1.01 | 6.46 | 5.14 |
| 38 | Hardware stores | outside Omaha and Lincoln | 1.05 | 4.83 | 2.43 |

The difference among the various tables and the spread among the stores included in the same table serve to emphasize the point made previously that the figures cannot be taken as standards for any individual concern because of local conditions. The tendency toward uniformity for stores of the same kind located in approximately the same kind of locality indicates, however, that such figures may be used as rough guides and serve as checks when the management is considering a new location or attempting to evaluate an old site.

The more difficult question relating to percentage leases is that of valuation. When a lessor's estate is to be valued, how shall the appraiser proceed? Shall he find the present worth of the fixed rentals or add an amount by way of possible return from the percentage arrangement? In the opinion of the author, only the agreed minimum rental can be considered, else the appraisal becomes a mere guess.

So in appraising a lessee's estate under such lease, one should consider the probable profits based on the minimum rental until sufficient time has elapsed to demonstrate the probable future rental and probable future profits.

## CHAPTER 9

# THE UNIT FOOT APPRAISAL METHOD—LONG AND SHORT RULE

The necessity for standards—One hundred feet depth the one most commonly used—A wide variation exists in the valuation of different parts of a lot 100 feet deep—Determining the relation of lot depth and its value—The long and short rule—Selecting a depth curve.

Frequently are found in the same block very deep lots, perhaps 300 feet deep, running back and fronting on another street. Beside this deep lot may be a very shallow lot 40 or 50 feet deep. All of the lots on one side of the street in one block may be 100 feet deep, those opposite 150 feet, while those in the next block may be 250 feet deep. How may an appraiser determine the value of these lots without adopting a standard involving an adjustment for these deviations? How may one compare sales in various blocks or streets without such a standard?

Much confusion in appraising is caused by lack of standards. When it is borne in mind that the first 25 feet takes on 47.90% of the value of a lot 100 feet deep, and the rear 25 feet of a lot 100 feet in depth is valued at only 11.70%, it becomes evident that the front part of the lot is worth four times the square foot value of the rear part of the lot. Assuming the lot 100 feet in depth is worth $100, having a value of $1 per square foot, for 25 feet we would have approximately $2 per square foot. It must be evident that square foot values and rentals are not comparable and that a standard of depth both to express capital and rentals is absolutely necessary. The importance of adopting a unit of quantity in appraising is well set forth by Walter W. Pollock and Karl Scholz in "Science and Practice of Urban Land Valuation" as follows:

> "In comparing the value of coal the customary unit of quantity is a unit of weight. In comparing the value

of liquids the customary unit of quantity is a unit of volume. In comparing the value of cloth the customary unit is a linear unit; and similarly in comparing values of other commodities. But in comparing urban land values, as a rule no customary unit is employed; at least none that is applicable. Urban sites are usually bought and sold or evaluated at so much per front foot; or in some localities, or for land used for specific purposes, such as commercial or industrial sites, at so much per square foot. But these units are no more applicable with any degree of accuracy as units of area for land valuation than a chunk of coal would be as a unit of weight. Except for purposes of expressing relative land values, mathematically exact and generally accepted units of quantity, such as tons, yards, pounds, bushels, feet and the like, are employed in commerce and trade. With such basic units of quantitative measurement the relative values of definite unit-quantities of marketable commodities can be readily expressed in monetary terms as definite prices. Without definite common units of quantity no satisfactory relative values of similar commodities can be expressed. Is it possible to compare the relative value of a yard of cloth, not knowing its width, with the value of a square yard of cloth? Even though a definite price has been established on each, of what practical significance would a comparison of the two prices be? Yet this is the customary procedure in comparing urban land values. Front feet are compared, without due regard to depth or corner or alley or other advantages, as though the line of frontage possessed actual value."

In this volume except as to railroad or manufacturing property, which is appraised on the square foot basis, 100 feet has been adopted as the standard unit depth of lots. (The following tables give in epitomized form the various tables for comparison.)

| Depth in feet | Somers' Cleveland Curve | Somers' Revised | Neill Rule (Hoffman) | Harper Edgar London | Davies' Curve N. Y. | Baltimore (standard 150 feet) |
|---|---|---|---|---|---|---|
| 5 | 14.35 | 13.05 | 17 | 23.0 | 12.5 | 9 |
| 10 | 25.00 | 23.45 | 26 | 32.0 | 21.8 | 15 |
| 15 | 33.22 | 32.50 | 33 | 39.0 | 29.2 | 21 |
| 20 | 41.00 | 40.45 | 39 | 45.0 | 35.8 | 27 |
| 25 | 47.90 | 47.46 | 44 | 50.0 | 41.5 | 33 |
| 30 | 54.00 | 53.71 | 49 | 55.0 | 47.0 | 38.5 |
| 40 | 64.00 | 64.16 | 58 | 63.0 | 56.7 | 49 |
| 50 | 72.50 | 72.50 | 67 | 70.5 | 65.8 | 58.5 |
| 60 | 79.50 | 79.40 | 74 | 77.5 | 73.3 | 67 |
| 70 | 85.60 | 85.43 | 81 | 83.6 | 80.5 | 73.9 |
| 75 | 88.30 | 88.21 | 84 | 86.6 | 84.1 | 76.9 |
| 80 | 90.90 | 90.85 | 88 | 89.4 | 87.5 | 79.6 |
| 90 | 95.60 | 95.68 | 94 | 95.0 | 94.1 | 84.2 |
| 100 | 100.00 | 100.00 | 100 | 100.0 | 100.0 | 88 |
| 110 | 104.00 | ..... | ... | 105.0 | 106.9 | 91.1 |
| 120 | 107.50 | ..... | ... | 109.5 | 111.1 | 93.8 |
| 125 | 109.05 | ..... | 112 | 112.6 | 113.7 | 95 |
| 140 | 113.00 | ..... | ... | 118.2 | 121.2 | 98.2 |
| 150 | 115.00 | ..... | 118 | 122.4 | 126.1 | 100 |
| 160 | 116.80 | ..... | ... | 126.4 | 131.1 | ... |
| 175 | 119.14 | ..... | 122 | 132.3 | 138.5 | ... |
| 180 | 119.80 | ..... | ... | 134.2 | 141.2 | ... |
| 200 | 122.00 | ..... | 125 | 141.4 | 149.0 | ... |

Example—Given a lot 80 feet front, 150 feet deep, unit value $50.00. According to the Cleveland table 150 feet is equal to 115 per cent of the unit. Therefore 115 per cent of $50 equals $57.50 actual unit.

Eighty feet by $57.50 equals $4600, value of lot.

A more detailed table of the various forms in use in various parts of the United States will be found in the addenda, the table being taken from "City Growth and Values" by Stanley L. McMichael and Robert F. Bingham.

It will be noticed that there is not a very wide variation in the valuation of the different parts of a lot, 100 feet in depth under the various standards. The apparent differences are largely due to a change of standard unit. When it is borne in mind that a change of standard (150 feet instead of 100 feet) involves a change of unit of value it will be seen that even in such case there is great similarity in the valuation of the parts of such lots.

For example, compare the Cleveland and Baltimore standards, which allow 100 per cent for 100 feet in Cleveland and 100 per cent for 150 feet in Baltimore. Assuming a $100 per foot standard depth lot, if the lot were 150 feet deep, the added per cent would be 15, or 115. In Baltimore, the 150 feet lot being deeper would presumably be worth $115 and 100 feet is figured at 88 per cent of the whole or $101.2. This shows, then, a variation of but 1.2 per cent between the two standards at 100 feet in depth.

A more detailed table of the Cleveland (Somers') percentage of unit value for depth is found in the appendix. Likewise a more detailed comparison of the various curves, now or heretofore in use, which table is taken from McMichael and Bingham's "City Growth and Values"

Many attempts have been made to accurately ascertain the relation of lot depth to value. It is evident that usually the deeper the lot the greater its worth. It is likewise clear that while the value increases with depth it does not increase in exact proportion thereto. Studies made in many cities in both Europe and America seem to prove that there is a mathematical relationship existing between the depth of a lot and its value. Therefore it seems possible to express this variation in percentages of the unit value.

The first depth curve in use was what is known as the 4-3-2-1 rule. This method divided the tract to be appraised into quarters, then to the first quarter running back from the street, 40 per cent of the value of the entire tract was given. To the second quarter back, 30 per cent, to the third quarter, 20 per cent, and the last quarter received but 10 per cent of the entire value. Expressing this in a different manner, should the lot be 100 feet in depth, the first 25 feet would be worth 40 per cent of the whole, fifty feet 70 per cent, seventy-five feet, 90 per cent and one hundred feet, 100 per cent.

In Baltimore for many years appraisers used a rough and ready rule called by the late Alfred D. Bernard, the "one third front, two third rear rule." This gave the first third of the lot half of the entire value, the remaining two thirds carrying half of the value.

Judge Murray Hoffman of New York City is credited with having in 1866 established the first recognized rule for appraising lots of varying depths. In his opinion, the first fifty feet of a lot one hundred feet in depth was worth two thirds of the value of the entire lot. On this basis the first twenty-five feet of a lot one hundred feet in depth equalled 37½ per cent, the first half equalled 67 per cent, three quarters, 87½ per cent and one hundred feet equalled 100 per cent.

Henry Harmon Neill of the New York Evening Mail revised the Hoffman rule and what is known as the Hoffman-Neill rule was evolved. This rule gave each foot of depth a definite percentage of value. His revision is still in use in New York City.

The late Alfred D. Bernard while working in Baltimore announced the Lindsey-Bernard rule for long and short lots using 150 feet as a depth basis. Soon afterwards came the New York suggestion of A. C. Pleydell and the Newark rule which was a modification of the old 4-3-2-1 method.

Writing in the 1911 edition of the diary of the Real Estate Board of Brokers of New York, William Davies tells how he developed his rule based upon the average of sales of 10,200 lots of varying depths. He devised a formula which led to the compilation of his scale of depth values. Since this was determined from transactions in New York governed by the same influences that were studied by Judge Hoffman, the ratios established are strikingly similar to his earlier efforts.

A scheme was devised for the purpose of determining the relative value of long and short lots by the late W. A. Somers of St. Paul for use in that city. Later this was used by Mr. Somers in Cleveland in connection with the revaluation of all land in that city for the purposes of taxation during the year 1910.

A thoroughly scientific study of the principles governing the fixing of land values for the purposes of taxation was made by Dr. Wilfred Isbell King, formerly of the University of Wisconsin. His studies were chiefly in Milwaukee, and he promulgated the King curve for residential lots.

Chicago tax appraisers follow a curve that is known as the Martin depth curve. It is based on a unit depth of one hundred feet as a standard. Over the unit depth the variation from the Hoffman or the Cleveland rule is very marked. For illustration:

### THE LONG AND SHORT RULE

| Ft. | Hoffman-Neill | Cleveland | Martin |
|---|---|---|---|
| 25 | 44 | 47.9 | 34.35 |
| 50 | 67 | 72.5 | 57.50 |
| 75 | 84 | 88.3 | 79.35 |
| 100 | 100 | 100. | 100. |
| 125 | 112 | 109.05 | 119.35 |
| 150 | 118 | 115. | 137.5 |
| 175 | 122 | 119.14 | 154.35 |
| 200 | 125 | 122. | 170. |

Only a few of the scales go beyond a 200 foot depth. This is due probably to the influence exerted upon the designers of the scales by local conditions in the cities where they worked. The Cleveland Curve is extended to measure depths up to 700 feet. According to this system a lot 700 feet deep bears an additional value of 42.35 per cent over the standard of 100 feet.

## SELECTING A DEPTH CURVE

In most cities a standard of 100 feet is in use, while in others a standard depth of 150 feet has been adopted. Some of the writers on the subject say a different standard should be employed for each class of property, such as high class retail, ordinary retail, wholesale, apartment and individual house, but others, finding from experience that it is impractical to use more than one depth curve for the different districts, use 100% for 100 feet standard as the best unit depth for all classes of property. This latter uniform standard for all classes of property permits easy comparison of all land values. It permits easy transmutation from the standard foot to the square foot value. For example, a standard foot value of $100 is equivalent to $1 per square foot where the property is 100 feet in depth, while property 200 feet in depth with a standard foot value of $100 is equivalent to about 61 cents. Comparisons of this kind are found necessary by every appraiser in sections where property sells both on the square foot basis, as in manufacturing property, and on a front foot basis, as in residential or store property. All depth curves in use, except three, until 1926 were adjusted to definite and fixed percentages of value which the projector thought certain parts of a standard lot should enjoy. These guesses, in most cases, were marked on cross sectional paper and a line drawn through these points determined the percentage for all other depths. Such tables necessarily involved inaccuracies and irregularities.

The curves figured out on a mathematical formula were the 4-3-2-1, the Hoffman-Neil and the Harper-Edgar Rules. The 4-3-2-1 Rule is based on the assumption that the 1st 25 feet of a 100 foot lot is worth 40%; the next 25 feet, 30%; the third quarter, 20%; and for the last quarter 10%. The percentages for all depths up to 100 feet, in the Hoffman-Neil Rule is based on the principle that the first half of a lot is worth two-thirds of the full depth, e. g. 50 feet (one-half of 100 feet) equals 66 2/3% of 100 feet value. The Harper-Edgar Rule is worked out for 200 feet by taking the square root of the number of feet representing the depth, and multiplying by 10.

This rule, used in England for many years, is worked out through a simple mathematical expression, namely $\% = 10\ N^2$, in which N is the number representing depth up to 100 feet. For example, what % of a standard lot (100 feet deep) is 36 feet? The square root of 36 is 6 multiplied by 10 equals 60. Thirty-six feet therefore is worth 60% of the whole.

The question as to the value of different parts of a lot has assumed universal importance of late because of the activities of many cities in widening their thoroughfares to meet increasing traffic demands. For example, if a city widens a street 5 feet on each side, lots being 100 feet in depth, what per cent of the standard lot value should be paid the owner?

The Cleveland table shows that a 5 foot strip fronting on a street of a 100 foot lot is 14.35% of the standard price. However, when a street is widened and 5 feet fronting on the street is taken away, we still leave the owner with a frontage and in fact are taking 5 feet from the rear, and thus taking but 2.15% of the price for a standard lot. The 14.35% represents the value of the 5 foot strip when fronting on the street, leaving a 95 foot strip without a frontage. In other words, it is a division of the values of a 100 foot strip when the first 5 feet is in the one ownership and 95 feet in another.

It is perfectly clear that the owner is left with a 95 foot parcel fronting on the projected street. This probably accounts for the fact that in many of our large cities with the demands for street widening, property owners generally freely donate the strips necessary for widening, feeling that not only is very little value taken, but the widening has the effect of increasing the value of the remaining strip even more than the value of the 5-foot strip donated.

Of course, where the property is improved the cost of part of the improvement and the damage to the residue may be considerable. Likewise, a much more difficult question arises when the part remaining, unappropriated, is not sufficient for that usage to which the location is best adapted.

# CHAPTER 10

## CORNER LOT APPRAISALS

A scientific method involved—A narrow corner lot more valuable in proportion than a wide one—A deep corner lot more valuable than a shallow one—Different sizes must be reflected in appraisals—Elements of value in a corner lot—Corner lots often more valuable than commonly supposed—Systems in vogue in different cities—A standard is necessary—Utility reflected in value—Corner lot tables—Residential corners—Semi-business corners—Triangular corners—Merged lots—Overlap table—Three frontage corners—Transmitting corner to inside lot values.

No subject of appraisal is so undeveloped as the matter of valuing corner lots. Many real estate experts still add 20 per cent to the inside lot values to express their opinion of corner lot values. Such use of a common rule is unscientific. Corner lots, additional value over inside lots must depend on their depth, their width and the relative value of the side street.

Assuming a business lot fronts 25 feet on a corner by 100 feet deep—such a lot is barely sufficient upon which to erect a modern structure without leaning, so to speak, on the side street. Almost the entire lot can be utilized, where the inside lots may not be so used. That is to say, every foot of the depth of a corner lot has a frontage on the side street. It has light, air, access for display purposes. It is therefore worth more than the inside lot, even though the side street may be only an alley 12 feet wide.

For the purposes indicated, a 25 foot lot, cornering on a 12 foot alley, is worth practically as much as, perhaps, a 35 foot inside lot. In other words, such a lot is worth 40 per cent more than the inside lot. However, as the lot gets wider, the relative value of an alley to the greater width is less. The deeper the lot on such alley, the more the rear value is dependent thereon. Its value might be very little without the facilities of access, unless it had a rear frontage or other easements or rights, which frequently are costly to secure.

If a mere public alley or private right-of-way, adds from 40 per cent down to the value of a business lot, how much greater per cent of increased value will arise when such an alley becomes a fifty or seventy-five foot alley, dead end street, or private right-of-way, permitting high structures, affording light, air, loading, unloading, turning, etc.? When to these facilities for additional use of ground floor, basement and upper stories there is a live street, involving added display facilities, sidewalk traffic, more buying—when these intersecting streets are worth from 10 per cent to 100 per cent of main street values, it must be evident that street corner lots become more valuable than alley corners and that they take on additional values in proportion to their width and the relative value of the side street frontage.

When such a corner lot is very deep, permitting stores to be fronted on the side street, it must be evident that a greater per cent of value inures to a deep corner lot than to a shallow corner lot. Any system devised for determining corner lot values must consider and value each of these varying factors.

The thousands of variations of corner lots, due to elements of width and of depth of lot and of side street units, must be reflected in any appraisal. It is perfectly obvious that the rough method of adding 20 per cent for corner value is unscientific and stupid.

Appraisers seldom attach sufficient importance to corner lots. Corner lots not only give additional light, air, accessibility, display, but also a greater utilization of the lot itself. Building codes in cities generally provide that only a certain proportion of the inside lot as well as of a corner lot may be built upon. In certain cases inside lots may use only 60 or 70 per cent of ground floor corner lot areas. High class buildings not on a corner, as to upper floors at least, must of necessity set aside a greater amount of open areas for light and ventilation than is done for corner properties.

As a matter of concrete illustration that corners require a much greater valuation than is usually attributed to them, look about in any large city. What does one find? Almost without exception the large office buildings and department stores are built fronting on two or three streets or alleys.

The late Alfred D. Bernard, in his "Principles and Methods of Real Estate Valuation" says: "Go through the retail business districts of the twenty cities in the first class in the United States, and in all of them what do you find? The corners usually are improved by buildings running from five to twenty stories in height, while the inside lots are generally improved by buildings from two or three stories in height. Where the inside lots are improved above the height of three stories, you will find the floors either vacant or rented out for storage or light manufacturing, at rents varying from ten cents to fifty cents per square foot, scarcely earning on the extra cost of construction, leaving the entire value of the land to be earned out of the ground floor.

Corner lots lend themselves to a higher and more intensive use than inside lots in large cities, as most office buildings and high class developments are built on corner sites. A fixed and fast rule of adding a certain percentage to the value of an inside lot to express a corner lot value, so frequently resorted to by the unthinking is a grossly inaccurate and stupid method, as corner lots sometimes vary from 18% to 126% increase over inside lots where a lot is 50 feet by 100 feet in depth.

A review of a few of the systems for valuing corner lots may be interesting. The so-called New York Pleydell rule adds 15% to the high street unit plus 50% of the side street unit. This applies to the actual corner lot ownership and not to the second lot if in a different ownership, although the lot may be within the 100 foot zone. Thus, if the main street is $1000 and the side street is $300, add 15% or $150, then add 50% of $300 or $150, making a unit value of $1300 or 30% increase. In Jersey City, N. J., it is understood a flat 33 1/3% is or has heretofore been added to express corner values. In Buffalo, it seems that but 12% is added to a 100x100 foot corner lot, regardless of size or side street values.

In Milwaukee as to improved residence property seven and one-half feet is added to the frontage of the lot for corner influence for full depth of the lot. This, therefore, involves an addition of 25% on a 30 foot lot and 15% on a 50 foot lot. As to business property, added corner value is calculated to the depth of the lot not exceeding one hundred feet by adding seven and one-half feet of the front street value and by adding one-third of the side street value figures as a lot one hundred feet front and forty feet deep on the side street. This involves, in a case where the frontage is worth $500 and the side street $400, an increase of about 85%. If the lot is wider, no additional corner influence is added.

In Detroit, a modification of the Cleveland system is in vogue, the assessors having adopted a 24% maximum addition as to down-town values, although as to less valuable retail property an addition sometimes of 48% and sometimes 72% is made as to 100x100 foot lots with a 1-1 relationship. Much less, of course, is added where a relationship of $1000 to $300 exists. The Baltimore system considers a corner lot as two lots, one fronting on the main street and the other on the side street. The addition of the two values rėpresents the "minimum" value of high-class retail property. The Chicago-Martin system adds 60% increase over an inside lot for a 100 foot lot, while a 50 foot lot takes on a 74% increase.

A prominent appraiser in a midwestern city uses five different corner tables for five different classes of property. In this he is supported by a well-known Chicago writer, who uses a different depth curve in calculating the front street as well as the side street corner addition, depending in each case on the character of the neighborhood as to the respective streets. For example, if 50 feet deep, this authority adds 77% for high-class retail, 73% for ordinary retail, 67% for wholesale, 58% for house and 55% for apartment sites according to the classifications the front or side streets fall into. For a lot 200 feet in depth, if a high class retail property, the second 100 feet are worth but 11.4% additionally over a 100 foot lot. Not only does he urge the use of a different depth curve but after computation on these various curves, he adopts the following percentage both of the front and side lot calculation: 100% for high-class retail, 90% for ordinary retail, wholesale 78%, apartment 82%, house 65%. This is applied to front and side street units according to the classification the respective frontage should be adjudged.

The system is not only too complicated for use, too liable to err, but impossible of practical application. If ever used in our large cities, it would result in thousands of complaints. Not only is it exceedingly complex, involving error in additional calculations but the difficulty involved in determining whether certain property falls within one class or another is considerable.

In all these refined adjustments of a standard, the appraiser attempts to adjust the value of the property to its use, rather than to its worth. For example, a depth curve which allows only 58% of a unit value for 50 feet in depth in a house district is erroneous. Likewise the imputing to the first 50 feet of an apartment house district of but 54%. One fails to see that the first 50 feet of an apartment site, worth perhaps $300 to $500, is worth a less proportion of the 100 feet than the first 50 feet of a residence site, worth perhaps $50 to $150. The fact that every foot of an apartment site may be intensively used does not change the situation any more than if a department store uses the rear of a store to equal advantage with the front part. The question always to be borne in mind in the foregoing instances as well as in the wholesale district is this: If the front 50 feet of the property were owned by one person and the rear owned by a second person, what would be the relative worth of each owner's part of the whole? To inquire as to its value in the ownership of a single person is an idle, speculative question. The question has point, pith and vitality only where different parts of the whole are owned by different persons.

Another thing to be remembered is that differences of general utility are reflected in the value of the unit. An apartment site may be worth $300, a house unit $100, a wholesale district site $200, a retail district $1000 and a high-class retail $5000. It is self-evident that the first 50 feet of the latter will be worth more than the former, due to the value of the unit involved, rather than due to any assumption of a greater utility value of a part of the respective lots. A house may not be built on the front of a residence lot. The latter may be devoted to parking. Convey the front part to another owner, leaving the house without egress or ingress and you will find the owner of the front lot asserting a value quite as commensurate to the whole unit as in the case of the highest retail property.

The fundamental reasons why corner lots are worth more than inside lots are well known. They not only give light, air, accessibility, display but permit a greater utilization of the lot itself. Building codes in cities generally limit the use of the inside properties sometimes to the extent of 70% of the use of corner lots. In other words, a corner lot may enjoy as much as 40% greater utilization than an inside lot.

In valuing corner properties a few cardinal principles must be observed:

1—The value of a corner property varies with its depth, the deeper property of course taking on an added value, while a shallower lot takes on less.

2—It varies according to its width, the percentage of increase increasing as the lot becomes narrower and less as it becomes wider.

3—It increases with the increase in the value of the side unit

While these principles are few, they permit of thousands of variations. Any system not adjusted to these variations must be condemned as inaccurate and insufficient. A number of engineers and students of appraisal work add to the main street a fixed, invariable percentage of the side unit to lots of fixed widths, such as 20 or 40 feet. It must be obvious, however, that unless a city is divided into uniform blocks and lots, that such a rule would have a very limited application. If rules are to be judged of any value, they must be of general application, adjusted to all variations of a standard lot. It must also be apparent that a fixed percentage of the side lot unit to the frontage unit does not allow for any adjustment to the varying depths or to the fact that the narrower lot must take on a greater additional corner influence value than the wider lot. In other words, so long as a depth curve is used involving emphasis on the front part of the lot, the addition cannot be geometric. Under these fixed percentage methods, the rear furthermost square foot of a lot 50 feet in depth on the side street would be worth as much as a square foot on the street.

The Cleveland method of valuing corners is simple. The corner lot is treated as two lots, one fronting on the main street and one fronting on the side street, whereby the depth of the former becomes the frontage of the latter and vice versa. This rule applies to 100 feet each way only, any excess being figured as inside property. The side street unit is, however, somewhat modified by the use of a corner lot curve as follows:

## CORNER LOT PERCENTAGE TABLE

**Zangerle Curve**

(For Depth of Side Street Which is the Frontage on the Main Street)

| Feet | % | Feet | % | Feet | % | Feet | % | Feet | % |
|---|---|---|---|---|---|---|---|---|---|
| 5 | 15. | 25 | 46. | 45 | 60.7 | 65 | 67. | 85 | 70.5 |
| 10 | 25. | 30 | 51. | 50 | 63. | 70 | 68. | 90 | 71. |
| 15 | 33. | 35 | 55. | 55 | 54.5 | 75 | 69. | 95 | 71.5 |
| 20 | 40. | 40 | 58. | 60 | 66. | 80 | 70. | 100 | 72. |

Example: High valued street, or front is worth $1,000 per foot, and side street is worth $300 per foot for a standard lot of 100 feet in depth. Lot is 50 ft. wide and 100 ft. deep. This will be illustrated and calculated as follows:

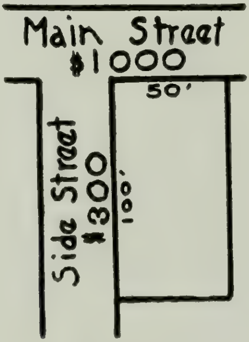


DIAGRAM 1

Main St. 50 ft. front×100% (100′ depth)
of $1,000=$50,000 Front foot value.

Side St. 100 ft. front×63% (50′ depth)
of $300=$18,900 Corner influence.

$68,900 Lot Value

Figure corner influence back 100 feet from the side street.

The application of these principles result in the following increases in per cent over an inside lot, the first column representing the relationship of main street to side street unit values, the second column of a corner lot 100x100, the third a corner lot 50x 100 feet, the fourth of a corner lot 40x100 feet and the fifth a 50 foot lot adjacent to a 50 foot corner lot:

| Street Unit | Lot 100x100 | Lot 50x100 | Lot 40x100 | 2nd 50 Feet |
|---|---|---|---|---|
| 7-1 | 10% | 18% | 20% | 2⅔% |
| 6-1 | 12% | 21% | 24% | 3% |
| 5-1 | 14% | 25% | 29% | 3.6% |
| 4-1 | 18% | 31% | 39% | 4.5% |
| 3-1 | 24% | 42% | 48% | 6% |
| 2-1 | 36% | 63% | 70% | 9% |
| 1-1 | 72% | 126% | 145% | 18% |

In connection herewith, it should be borne in mind that main to side street relationships of 7 or 6 to 1 are few, while relationships of 1 to 1 are very rare in any city. The relationship of 3 to 1 or 4 to 1 is probably the predominating relationship. If a lot 50x100 feet be taken as a normal corner lot, with a 3-1 relationship, it will be noted that an addition of 42% is necessary to an inside lot. As we increase the width or length of the lot, the corner influence is absorbed and therefore the per cent of increase decreases with its width and increases with its depth. The foregoing comment is presented to give the appraiser a rough and ready standard of increase; also as reflecting on the serious under-appraisal of high-class retail property with the concurrent over-appraisal of ordinary retail property in the adoption of a uniform rate of from 18% to 33% increase by certain of our leading cities. A number of cities add a corner influence as to the actual corners only, whether it be 20 feet, 30 feet, 40 feet or any other width. They fear that it might over-appraise the second lot. The inequality resulting from calculating different values on four different corners of different dimensions perhaps at the same street intersections must be manifest. For if a corner influence on a 20 foot corner is added, leaving the remaining 80 feet without addition, while across the street perhaps a 50 foot, perhaps a 100 foot corner property is increased up, a palpable inequality ensues. To those, who think the 80 foot lot is worth no more than a nearby inside lot, inquiry should be made of the owner as to its value and an attempt made to buy it at such inside lot value.

How little the Cleveland system adds to the second corner lot will be seen from the above table. For example, taking again the 3 to 1 relationship, the second lot takes on 72% less 63% or 9% of the side unit, or a value of $309, or but 3% increase over an inside lot of $300 per foot.

A few examples of Cleveland real estate valuations for assessment purposes will be interesting as showing the great variation in corner lot value under scientific methods, results not possible under fixed percentage increases. The southwest corner of Euclid and East 4th street, known as the Kresge corner is assessed at a unit of $15000 yet the assessed running foot is $21,920 or a 46% increase over a standard lot. The Park building site, the southeast corner of the Public Square and Ontario street, assessed at $10000 a unit, is assessed at $23,739 a running foot. The northwest corner of Euclid and E. 6th street occupied by the United Cigar store and others is assessed at $12000 a unit, yet it figures and is assessed at $31,707 a running foot. The National City Bank Building site on the opposite and the northeast corner, formerly known as the Garfield building, has an assessed unit value of $12000, yet its running foot value is likewise $25,703.

Most interesting are the Euclid-E. 9th street corners, Cleveland's best known and busiest corners, occupied respectively by the Union Trust, the Cleveland Trust, Schofield and Hickox buildings. The unit values are $12,500 as to three of these corners and $13,000 as to the Schofield site. The northwest corner, occupied by the Hickox building is assessed at $24,967 a running foot. The northeast corner, being the Union Trust building site, is appraised at $34,697 a running foot. The southeast corner, occupied by The Cleveland Trust is assessed at $17,416. The southwest corner, the Schofield building site is assessed at $47,427 per frontage foot. These extreme variations are due to differences in depth, in width, in side street units and in the shape of each lot.

It may be suggested that these systems are all right in theory but are not founded in fact. Of course no system appraises all factors of value. In a particular appraisal, the income should be considered, the money market, inferior or superior, present and potential uses, the lease rentals, the state of obsolescence of the building and many other speculative and economic factors Outside of special factors of local or particular significance requiring deviations from the rule in the judgment of the appraiser, requiring perhaps increased, perhaps decreased corner influence value, these systems are of great assistance in fixing comparative land values and are in many instances based on actual and in some cases very rich experience. More and more realtors and investors are relying on their validity and credibility.

The late A. D. Bernard of Baltimore gave his formula of a double lot valuation as the result of his twenty years' experience as a real estate expert—experience acquired in the review of nearly 100,000 pieces of real estate, ranging in value from $100 to $2,000,000. Mr. Richards of Washington has been tabulating sales to assessments for a number of years. Mr. Pleydell of New York City, is one of the oldest students in the United States of real estate appraising. Engineer Cloos of Milwaukee, Messrs. Martin, Alcott and Babcock, all of Chicago, are widely known for their study and writings on this subject. Mr. Somers had several years experience in New York, Cleveland, St. Paul and other cities. Cleveland has been appraising for taxation purposes probably 30,000 corner lots annually since 1910 with no greater proportion of complaints as to them than to inside properties. In the 1924 re-appraisal of Euclid avenue in the city of Cleveland, 19% of inside lot owners complained of their valuation while but 18% of the corner owners complained. Euclid avenue is in part a high-class retail thoroughfare, in part ordinary retail and in part a residential speculative district fast changing to ordinary retail and having land values ranging from $1000 to $15,000 per standard lot.

Some authorities attach additional value to the actual corner only, whether the same be 20, 30, 40, 50 or 100 feet wide. That this is not scientific and will involve many discriminations and inequalities must be evident when we consider varying cases, for example:

**4 Corner Lots 100′ x 100′ Subdivided**

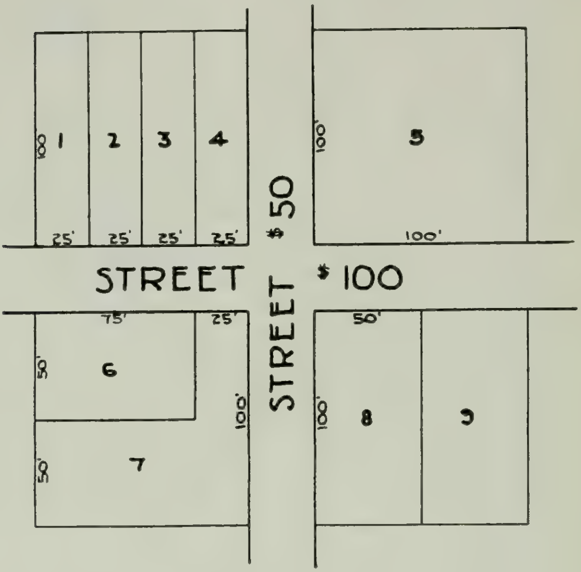


Diagram 2

If, in the above cases, we figure only an added value to lot 8, we will get a different value for 8 plus 9 as compared with lot 5, although the two blocks are manifestly of like value. If we give a corner value addition to lot 4 only in block 1-2-3-4, we will get a different value for 1-2-3-4 as compared with block 5, or block 8 and 9, or block 6 and 7—again manifestly erroneous. The true test of a corner lot system must be that blocks of like size and units when added together will be identical in value with other blocks of the same area. For, rest assured, the public assessor will be called upon to reduce a block or a lot when by comparison with another adjacent block, there is a variation against the owner of other lots.

The following tables of Corner Lot Values may prove a guide in approximating the real value and also give a comparative and average corner lot computation under the various systems and with various street unit relationship.

## CORNER LOT VALUE TABLE

**Lot 100 x 100 feet**

### SYSTEMS COMPARED

| Street Units | Inside Lot Values | Zangerle Corner Lot Values | Somers Corner Lot Values | Baltimore Corner Lot Values | Average Corner Lot Values |
|---|---|---|---|---|---|
| 7-1 | 100% | 110.3% | 110.52% | 115. % | 111.94% |
| 6-1 | 100 | 112. | 110.88 | 116. 7 | 113.19 |
| 5-1 | 100 | 114.4 | 111.89 | 120. | 115.43 |
| 4-1 | 100 | 118. | 113.17 | 125.08 | 118.75 |
| 3-1 | 100 | 124. | 115.45 | 133. 3 | 124.25 |
| 2-1 | 100 | 136. | 121.32 | 150. | 135.77 |
| 1-1 | 100 | 172. | 150. | 200. | 174. |

In the above table, the first column, "street units," indicates the relationship between the value of the front street units and the side street units. The relationship in the first column, for example, 7-1, may be $700 on the main street and $100 on the side street. The case will apply to any other similar relationship however, such as $7,000 to $1,000, or $3,500 to $500, or $1,750 to $250. The second column, "Inside Lot," will represent an inside lot 100 feet in depth free from any corner influence, which is taken as the basis of value and further comparison. The third and succeeding columns shows the corner lot value on a percentage basis over the value of an inside lot.

Thus, taking a lot where the front unit is 4 times that of the side street, with a lot 100 x 100 feet, the inside lot, being at least 100 feet from the corner, is worth 100 per cent. The corner lot as figured by the Zangerle method is worth 118 per cent. The Somers corner value is 113.17 per cent, while the Baltimore value is 125.08 per cent. The average for the three systems is 118.75 per cent. This corresponds quite closely to the old method of adding 20 per cent but would apply only to corners 100 feet wide and where the side street unit is 25 per cent of the main street unit. Where the relationship of street values varies from 4 to 1 the percentage is greater or less as indicated.

The following will give comparisons under the various systems for a corner lot only 50 feet wide:

## CORNER LOT VALUE TABLE

### Lot 50 x 100 feet

### SYSTEMS COMPARED

| Street Units | Inside Lot Values | Zangerle Corner Lot Values | Somers Corner Lot Values | Baltimore Corner Lot Values | Average Corner Lot Values |
|---|---|---|---|---|---|
| 7-1 | 100% | 118. % | 118.35% | 120.71% | 119.02% |
| 6-1 | 100 | 121. | 118.79 | 124.14 | 121.31 |
| 5-1 | 100 | 125.2 | 121.45 | 128.95 | 125.20 |
| 4-1 | 100 | 131.5 | 123.75 | 136.23 | 130.39 |
| 3-1 | 100 | 142. | 129.22 | 148.33 | 139.85 |
| 2-1 | 100 | 163. | 138.07 | 172.45 | 158.50 |
| 1-1 | 100 | 226. | 190.07 | 244.98 | 213.35 |

To arrive at the value of a corner lot 50 x 100 feet, the inside lot 50 x 100 feet, at least 100 feet from a corner, is worth 100 per cent. The corner lot Zangerle method, if the relationship of the street units is $500 in front, $100 on the side (or any other 5 to 1 relationship) is approximately 125 per cent. The Somers value would be approximately 121 per cent, while the Baltimore system would be approximately 128 per cent. This means that when the front street is worth 5 times as much as the side, on a lot 50 x 100 feet, the Somers corner value is approximately 21 per cent more than an inside lot, the Zangerle value 25 per cent greater, while the Baltimore system figures such a corner at 28 per cent greater than the inside lot value. Such an increase represents approximately the value of a 12½ foot adjacent alley for light and approach, and does not add anything for show space or traffic value. The percentage of increase is therefore too little rather than too much.

It will be seen from the above that the corner value as figured under the three systems varies very slightly, that the Baltimore system appraises the corner considerably higher than the Zangerle or Somers system and that the Somers system is somewhat under the Zangerle calculations, depending on the unit relationship.

When finding the value of a corner lot, if it be more than 100 feet deep from the front or high valued street, find its value as a corner lot fronting on the high unit street but figure 100 feet deep only and then find the value of the rear of the lot as though it faced the low valued or side street only.

For example: If the frontage (Diagram 2) on the $300 side street had been 120 feet, the additional 20 feet would be figured at the side street unit for a depth of 50 feet, making the following value:

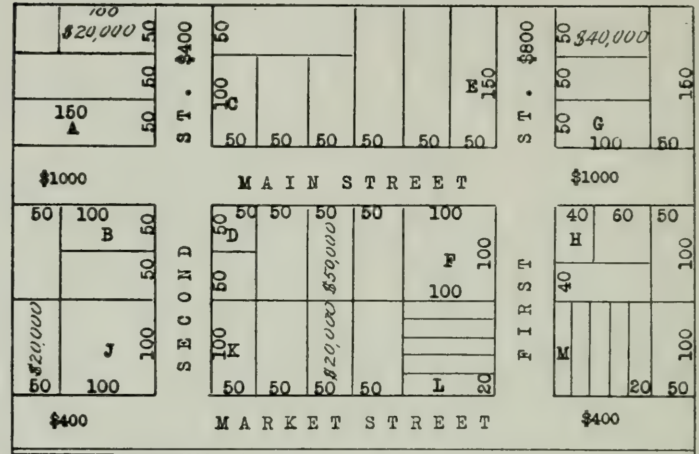
| | |
|---|---|
| 20 ft. x 72.5% (50 ft. depth) @ $300............ | $ 4,350 |
| Lot value of Diagram 2........................ | 68,900 |
| | $73,250 |

The diagram on page 128 gives a comparison of the corner systems of valuation of New York City, Baltimore, Chicago, District of Columbia, Somers, St. Paul, Cleveland, Buffalo and Pleydell, with appropriate graphic descriptions. This table was prepared by Assessor Wm. P. Richards, District of Columbia, and shows in an interesting manner comparisons of many different kinds of corner lots as calculated in dollars and cents.

It appears from Diagram 3 that seven of the eight examples show no very great variation in the aggregate valuations for the different kinds of corner lots from $70,167 to $82,538, the Buffalo system alone showing a value under $70,000. In illustrating so many corner lots with broad frontages and shallow depths, the system which accents and adds value to a short lot will show the greatest value. Where the long and short rule attaches less importance to the first fifty feet, a lower value will result. The map would have been more representative if fewer broad frontage lots had been considered, as such lots are greatly in the minority, indeed seldom occur. A system of corner valuations may, therefore, be in vogue in a particular city more correctly valuing the average lot, while the table of values might reflect seriously because of the character of lots used as illustrations. Of the twelve lots, one finds the following square or broad frontage lots—A, B, J, D, F, and G; in other words, six of the twelve illustrations are square or broad frontage lots.

A better perspective of the various systems would be obtained if a more typical block representative of standard shaped lots as well as more standard relations of unit values were used. A relation, for example, of $1000 to $1000 or even $1000 to $800 or multiples thereof is the exception rather than the rule. The general run of lots is nearer four or three to one as to retail property.

**CORNER VALUES - COMPARISONS BY VARIOUS RULES.**



1. District of Columbia
2. Baltimore, Md.
3. New York City
4. Chicago, Ill. (Martin)
5. Cleveland, O. (Somers)
6. St. Paul, Minn.
7. Cleve. O. (Zangerle)
8. Buffalo, N.Y.
3. (Pleydell)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | Average |
|---|---|---|---|---|---|---|---|---|---|---|
| Lot A | 117200 | 119750 | 120000 | 98800 | 116900 | 119000 | 123100 | 113400 | A | 116018 |
| B | 81700 | 86500 | 86700 | 70000 | 80600 | 84000 | 86900 | 78400 | B | 81850 |
| C | 70200 | 76600 | 70800 | 70000 | 65900 | 67000 | 75200 | 62000 | C | 69713 |
| D | 45500 | 46600 | 45000 | 41000 | 44000 | 46900 | 48800 | 46500 | D | 45538 |
| E | 122800 | 129800 | 115000 | 113000 | 111700 | 112000 | 129400 | Av.<br>55360 | E | 111134 |
| F | 144000 | 180000 | 155000 | 148000 | 136900 | 140000 | 157600 | 112000 | F | 146687 |
| G | 92700 | 106500 | 96700 | 90000 | 88900 | 98000 | 101300 | 78400 | G | 94063 |
| H | 54000 | 57200 | 48200 | 55200 | Av.<br>66950 | 54800 | 59600 | 40000 | H | 54494 |
| J | 62000 | 80000 | 66000 | 64000 | 60400 | 60000 | 68800 | 44800 | J | 63250 |
| K | 40200 | 46600 | 40700 | 40000 | 38000 | 37000 | 45200 | 31400 | K | 39888 |
| L | 31700 | 28300 | 26200 | 26000 | 25000 | 25900 | 32000 | 22400 | L | 27185 |
| M | 40000 | 32600 | 39900 | 26000 | 35200 | 36000 | 38600 | 35000 | M | 35413 |
| Average | 75166 | 82538 | 75850 | 70167 | 72538 | 73382 | 80542 | 59972 | | |

Diagram 3

It should be noted in the foregoing comparisons that the Cleveland average value for all of these lots is $80,542, while an average for the various totals of the eight systems amounts to $75,940. The Cleveland system is, therefore, approximately 5 per cent more than the average system of calculating these twelve different kinds of lots, which, as aforesaid, does not represent the usual run of lots.

## RESIDENTIAL CORNERS

In assessing Cleveland residential property no additional value is added to a corner lot over an inside lot. This is done entirely for administrative reasons. The volume of work encountered will not permit of any other method. This does not mean, however, that many such lots, purely residential in character, may not be worth more than inside lots. If on a street inclining towards business development, or if on an automobile thoroughfare or street car line, it is, of course, not entirely residential. However, even as to purely residential property the appraiser must seek through sales the market value of such lots. Some corners sell for the same price as inside property, especially where improvements are not yet installed or not yet paid for, or where the corner lot is restricted against building an improvement fronting on the side street. Where none of these contingencies exist the corner residential property usually will be found to sell at a somewhat higher price than inside property.

In Cleveland the assessor annually receives plots of many new allotments for valuation of the sub-divided lots. Asking prices are entered on each lot. In a tabulation of several thousand residential lots by reducing them to a standard foot basis, and after eliminating lots on thoroughfares it was found that the average increase in the asking price of corner lots over inside lots was 6.7 per cent. The subdivisions considered were of many kinds. As to some only grading, curbing and sidewalks were in, while others were fully improved. Some were four, others ten and twelve miles from the center of the city.

It is believed that one reason for this increase in the desirability of residential corner property is the advent of the automobile requiring entrance to a garage. The increasing value of land and the increasing tax burden tend towards narrower lots. These combined factors are undoubtedly adding value to residential corners to many persons who formerly disliked the added care and lack of exclusiveness of such property. The ability to use the entire front yard for lawn and structure, eliminating a seven or eight-foot driveway in front by using seven or eight feet cut off the rear, the least desirable part, is an offset to the objectionable features of corner lots. Driveways were not so necessary eight or ten years ago when there may have been one auto to twenty persons, while now a garage and driveway are a necessity for most families, there being about one auto to each five persons. Assuming the average standard family to consist of four or five persons, the day is fast approaching when there will be an auto for every family and that the demand for garage, driveway and corner lots or wider lots will increase.

Many city streets constantly undergo a change of utility. Originally the only structures may have been residences. Due to the growth of a city, or a change of routing of street cars, the street may become a business thoroughfare. In practical appraisal work in case there be doubt as to the proper classification of a street, the character of present building operations should control. In case store buildings now predominate over dwellings, the street should be classified as a business thoroughfare and so assessed.

## SEMI-BUSINESS CORNERS

All thoroughfares enjoying street railway traffic are changing from residential to business property and will therefore take on a corner influence, excepting corners on streets of less value than $50 per foot front will show no corner influence but should be figured at 100 feet deep on the main street and the balance of the depth as fronting in the side street on the Somers curve. This treatment will involve generally an increase of approximately 20 per cent over an inside lot of 150 feet in depth. For administrative reasons, such corner lot only (i. e., not the second lot) should be so figured, irrespective of its width, in cases of semi-business property worth less than $50.

All business lots with main street values of $200 per foot front should take on the full increment as shown heretofore. For business lots of less value add as follows:

## TABLE OF PARTIAL CORNER ADDITIONS

Corner Lots Worth $200 or Less per Foot on the Main Street

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| If | valued | $ 50—$ 59 | inclusive, | add | 25% | of | corner | influence |
| " | " | 60— 69 | " | " | 30% | " | " | " |
| " | " | 70— 79 | " | " | 35% | " | " | " |
| " | " | 80— 89 | " | " | 40% | " | " | " |
| " | " | 90— 99 | " | " | 45% | " | " | " |
| " | " | 100— 109 | " | " | 50% | " | " | " |
| " | " | 110— 119 | " | " | 55% | " | " | " |
| " | " | 120— 129 | " | " | 60% | " | " | " |
| " | " | 130— 139 | " | " | 65% | " | " | " |
| " | " | 140— 149 | " | " | 70% | " | " | " |
| " | " | 150— 159 | " | " | 75% | " | " | " |
| " | " | 160— 169 | " | " | 80% | " | " | " |
| " | " | 170— 179 | " | " | 85% | " | " | " |
| " | " | 180— 189 | " | " | 90% | " | " | " |
| " | " | 190— 199 | " | " | 95% | " | " | " |
| " | " | over 200 | " | " | 100% | " | " | " |

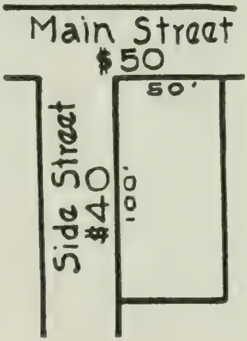


Diagram 4

Example: Lot 50 ft. front on street worth $50 per ft., and is 100 ft. deep along street worth $40 per ft.

Main St. 50 ft. front × 100% (100 ft. depth)
of $50 ........................ = $2,500 Front value.

Side St. 100 ft. front × 63% (Z.
Curve) (50 ft. depth) of $40
= $2,520. 25% thereof......... = 630 Corner influence.

$3,130 = Value of lot.

In the above case the full side street value as an inside lot would be 100 feet @ $40 = $4,000. The corner influence value as per the above table would be 63% thereof = $2,520. The unit of the main street of this corner being only $50.00 it is desirable that we take only part of such added value. According to the above table we should take only 25% thereof, which equals $630.00. This represents about 15% of the value of an inside lot. Had the main street unit been $200 or over the full corner influence addition would have been taken.

When a corner lot is less than 100 feet in frontage the second lot within 100 feet of the corner is assessed on a valuation equivalent to the difference between a 100 x 100 foot lot and the actual corner lot, figured on the Zangerle curve value.

## TRIANGULAR LOTS (Right Angle)

Produce the value of the lot as a rectangle at its given width and depth, at its unit value. When the base of the triangle is on the street take the following percentage of its full value. Said percentages should be governed by the depth of the perpendicular of the triangle:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| When | perpendicular | is | 10 | feet, | take | 50 % | of | full | value |
| “ | “ | “ | 20 | “ | “ | 55.5% | “ | “ | “ |
| “ | “ | “ | 30 | “ | “ | 58 % | “ | “ | “ |
| “ | “ | “ | 40 | “ | “ | 59 % | “ | “ | “ |
| “ | “ | “ | 50 | “ | “ | 60 % | “ | “ | “ |
| “ | “ | “ | 60 | “ | “ | 61 % | “ | “ | “ |
| “ | “ | “ | 70 | “ | “ | 62 % | “ | “ | “ |
| “ | “ | “ | 80 | “ | “ | 63 % | “ | “ | “ |
| “ | “ | “ | 90 | “ | “ | 64 % | “ | “ | “ |
| “ | “ | “ | 100 | “ | “ | 65 % | “ | “ | “ |
| “ | “ | “ | 110 | “ | “ | 66 % | “ | “ | “ |
| “ | “ | “ | 120 | “ | “ | 67 % | “ | “ | “ |
| “ | “ | “ | 130 | “ | “ | 68 % | “ | “ | “ |
| “ | “ | “ | 140 | “ | “ | 69 % | “ | “ | “ |
| “ | “ | “ | 150 | “ | “ | 70 % | “ | “ | “ |
| “ | “ | “ | 200 | “ | “ | 73.5% | “ | “ | “ |
| “ | “ | “ | 250 | “ | “ | 77.5% | “ | “ | “ |
| “ | “ | “ | 300 | “ | “ | 79 % | “ | “ | “ |
| “ | “ | “ | 350 | “ | “ | 80 % | “ | “ | “ |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| " | " | " | 400 | " | " | 81 % | " | " | " |
| " | " | " | 450 | " | " | 82 % | " | " | " |
| " | " | " | 500 | " | " | 83 % | " | " | " |
| " | " | " | 550 | " | " | 84 % | " | " | " |
| " | " | " | 600 | " | " | 85 % | " | " | " |

Example: Triangle with base on street worth $100 per foot. Base of triangle from A to B is 50 feet. Length of the perpendicular from A to C is 100 feet. Produce rectangle A B D C whose value would be $100 × 100% × 50 = $5,000. The perpendicular A C is 100 feet. 100 feet on the table equals 65%—the triangle A B C equals 65% of $5,000, or $3,250.

When the apex of the triangle is on the street, as shown in above example, B C D, you produce its value as a rectangle as before, and then take the percentage thereof that would be given by deducting the per cent representative of the depth of the perpendicular from 100%.

Example: Triangle B D C as a rectangle is worth $5,000. Its perpendicular is 100 feet long. A 100-foot perpendicular with the base on the street is worth 65%, and when the apex is on the street it is worth 100% — 65% = 35%. Therefore triangle B D C is worth 35% of $5,000 or $1,750.

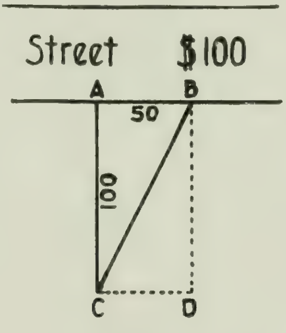


Diagram 5

The above percentages of value are merely convenient tables resulting from the use of the Somers table of values for variations of the standard. The same results would be secured by zoning the lot, by taking the average width of each zone 10 feet in depth each as a rectangle or trapezium and multiplying by the Somers table of percentage for each such 10-foot zone and adding the result as hereinafter more fully described. This triangular system will save the labor of writing, calculating and adding the several zones of each lot, as this is a very laborious method.

## MERGED LOTS

When a lot extends through from one street to another, as the lot A C D E, and one street has a higher unit than the other, the appraiser must merge the value; that is, find the point B in the total depth A C where the value of a foot will be about the same whether figured at the high or the low unit. To find this, add the high and low units together; thus, 3 plus 1 equals 4, obtaining the whole, of which each unit is a proportionate part. Divide the number of feet in depth, (160) by the sum obtained and multiply the quotient, (40) by each of the units separately, (3 × 40 = 120, and 1 × 40 = 40) and the result will be the number of feet in depth that each unit must extend into the lot before it will merge with the other unit.

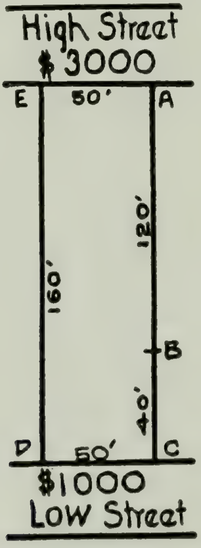


DIAGRAM 6

Example: Lot 50 feet wide, 160 feet deep, fronts on street worth $3,000 per foot and backs on street worth $1,000 per foot.

Add $3,000 and $1,000 equals $4,000 or a unit of 4. 160 feet divided by 4 equals 40. 3,000/4,000 equals ¾. If ¼ equals 40, ¾ equals 3 × 40 or 120 feet. 1,000/4,000 equals ¼ and ¼ equals 40 feet. Therefore the high unit will extend ¾ the depth or 120 feet into the lot and the low valued unit will extend back ¼ or 40 feet into the lot.

| | |
|---|---|
| High street frontage, 50 ft. by 107.5% (120 feet depth) @ $3,000 equals | $161,250 |
| Low st. frontage, 50 feet by 64% (40 feet depth) @ $1,000 equals | 32,000 |
| Lot value | $193,250 |

When the two sides of a lot the values of which must be merged, as above, are not of equal length, then add the length of the two sides together and divide by 2, thus obtaining the average length of the lot. Then proceed to merge value of the high and low units by using the average depth as the depth to be divided as shown above.

Some caution should be exercised in attempting to discover a merged point. Whenever a higher value is produced by considering a lot as fronting solely on the higher valued street, it should be figured that way rather than by figuring it as two lots, one fronting on each of the two streets.

# CHAPTER 11

## REFLECTED VALUE

How to ascertain value where unusual influences prevail—A point in every corner lot where it becomes more valuable—Overlap table—Three frontage corners—Three street frontage—Transmuting corner to inside lot values.

Writers frequently talk of reflected values, meaning by this that points of advantage, location, accessibility, and transportation centers radiate their influence and values inversely to distances therefrom. For example, taking the down-town section in any city it will be found that the sites enjoying the greatest advantage will enjoy the greatest value per foot and that these values shade off as distance therefrom increases.

Main thoroughfares reflect values upon cross-streets. The latter may still be used very largely for residential purposes, worth, say, $100 per foot front. When, however, the main artery becomes worth $1000 per foot front it begins to reflect value on cross-streets. It spills over, so to speak. Business which can not afford rentals on a $1000 a foot street, desiring to get into the district, will hug the artery as closely as possible, creating a demand for location on the residential streets, close to the main thoroughfare and cause an increase of prices. Such reflected values on cross-streets enjoy a relationship to the main street values of 3, 4 or 5 to 1 where the inside residential property may be worth 10 to 1. The thoroughfare may be worth $1000 per foot front, the residential street $100, but property adjacent to the main street will be worth $200 to $300 per foot. Indeed, when the main street is worth $1000 the immediately adjacent property on the side street is worth $220 as the tail of the 200-foot deep lot fronting on the main street. That is to say, under the long and short rule it is estimated that the first 100 feet is worth 100 per cent and the second 100 feet is worth 22 per cent of the front unit, or $220 of the $1000 unit.

This indicates that the adjacent unit must be worth at least $220 for the first adjacent lot, although it may taper off very rapidly. If the unit is less than $220 the rear 100 feet will be worth more as an appendage to the front than it will be fronting on the side street. The side street entrance, the added light and added traffic advantages surely add value over and above the appendage value. It is probable therefore that such a lot on a side street immediately adjacent to the first 100 feet will be of a value of 1 to 5 (200 to 1000) and more probably 1 to 4 (250 to 1000).

With a given relationship of front street value to side street value, there is a point in every corner lot where the lot becomes more valuable when figured as fronting the main street rather than the side street and vice versa. The following table gives the relationship of units whereunder an overlap occurs requiring a deviation from the usual method of calculating corner values. The second column shows at what point on the side street with a given unit value on main and side streets relationship the overlap takes effect. The third column gives the degree of angle commencing on the side street frontage demarking the line of overlap on a 200-foot lot. In other words, such projected hypotenuse of a triangle will show what part of such rear of the corner lot should be figured as fronting on the main street and what part should be figured as fronting the side street.

## OVERLAP TABLE

| Relation of Units —on Main and Side Streets. | Distance from High Street when 10 ft. Square fronting on Side St. figures the same value from both streets. | | Degree of angle for Hypotenuse between avg. point on Side St. and rear lot line 200′ from High St. |
|---|---|---|---|
| | Ends of 10′ frontage | Avg. | |
| 4 to 1 | 57′- 67′ | 62′ | 36½ degrees |
| 4½ to 1 | 67′- 77′ | 72′ | 34½ " |
| 5 to 1 | 76′- 86′ | 81′ | 33½ " |
| 5½ to 1 | 83′- 93′ | 88′ | 33 " |
| 6 to 1 | 96′-106′ | 101′ | 32½ " |
| 6½ to 1 | 102′-112′ | 107′ | 32 " |
| 7 to 1 | 107′-117′ | 112′ | 31 " |
| 7½ to 1 | 113′-123′ | 118′ | 30½ " |
| 8 to 1 | 118′-128′ | 123′ | 30 " |
| 8½ to 1 | 121′-131′ | 126′ | 29½ " |

For illustration, let us take a lot 100 feet on main street by 200 feet on the side street. The value on the main street is $1200 per unit, the side street being $200, the lot being illustrated as follows:

To compute the value of lot A B C D, Diagram No. 7.

First: Find the value of the corner for a frontage of 65 feet and a depth of 101 feet (A E F H). Second: Find the value of the lot for the balance of its width for the full depth (B C G H). Third: Find the value of the land covered by the triangle E F G.

All of the foregoing to be figured on the high valued street, and the following to be figured from low valued street.

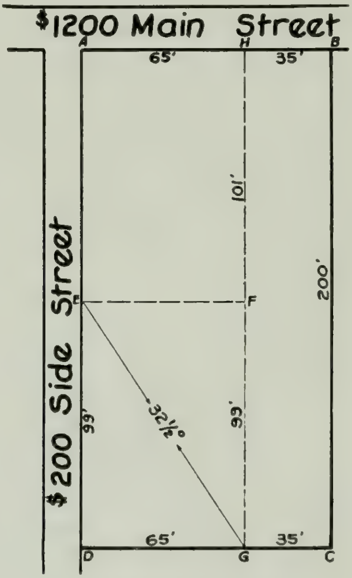


Diagram 7

Fourth: Find the value of the triangle D E G and, Fifth: add the corner influence.

1st: 65 ft. x 100.41% (101 ft. depth) @ $1200 equals $78,320
2nd: 35 ft. x 122 % (200 ft. depth) @ $1200 equals 51,240
3rd: 65 ft. x 10.8 % (½ of rectangle 99'

| | | | |
|---|---|---|---|
| | deep and 101′ from street) | @ $1200 equals | 8,420 |
| 4th: | 99 ft. x 82.61% (65 ft. depth) x 61.5% (triangle base on street) | @ $200 equals | 10,060 |
| 5th: | 100 ft. x 72% (per cent for corner influence 100′ depth) | @ $200 equals | 14,400 |
| | | LOT VALUE — | 162,440 |

In this case ordinarily, lot E F G D and the rear thereof would be figured as fronting on the side street. Due, however, to the wide relationship of the front to the rear units, viz., $1200 and $200, part of this lot, viz., E F G will have a greater value as fronting on the main street and is therefore said to overlap the rectangular lot fronting on the side street. As above stated, with a 6 to 1 relationship the dividing line for overlap commences at 101 feet from the corner with an angle at 32½ degrees.

## THREE FRONTAGE CORNERS

When a lot having a frontage of more than 100 feet on a high valued street and a frontage in the rear on a low valued street is bounded on one side by a street having a value between the high valued street and the low valued street, whose point of merge is MORE than 100 feet from the high valued street, proceed as follows:

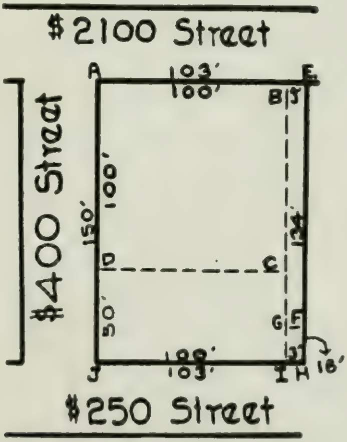


DIAGRAM 8

FIRST: Cut out a block (A B C D, Diagram 8) 100 ft. each way from the corner (A) on a high valued street produce its value at the high unit ($2100); SECOND: Produce its value on the side street unit ($400) as corner influence; Third: Produce a point (F) in the depth (E H) of the lot where the high valued street and the low valued street will merge in value; deduct 100 feet (A B I J) from the full width (A E or H J) of the lot (A E H J); produce the value of the remainder (B E H I) of said width by multiplying the unit (2100) on the high valued street by the percentage given for the depth (E F) back to the merge point (F), by its width (B E); produce by the same method, the value given by using the rear unit ($250) and the depth (F H) back to the merge point (F); FOURTH: Deduct 100 feet in length (A D) from the full depth (A J) and use the remainder of depth (D J) as frontage on the side street; produce value for said frontage for a depth of 100 feet (I J) at the side unit ($400); FIFTH: For corner influence use a frontage of 100 feet (I J) on the rear or low valued ($250) street and the depth (D J) the same as used for frontage on the side value street.

| | |
|---|---|
| 1st—100 ft. x 100% (% for 100 ft. depth front value) @ $2,100.00 equals | $210,000.00 |
| 2nd—100 ft. x 72% (% for 100 ft. depth cor. infl.) @ $400.00 equals | 28,800.00 |
| 3rd—3 ft. x 111.55% (% for 134 ft. depth front value) @ $2,100.00 equals | 7,028.00 |
| 4th—3 ft. x 34.92% (% for 16 ft. depth rear value) @ $250.00 equals | 262.00 |
| 4th—50 ft. x 100% (% for 100 ft. depth side value) @ $400.00 equals | 20,000.00 |
| 5th—100 ft. x 63% (% for 50 ft. depth cor. infl.) @ $250.00 equals | 15,750.00 |
| Lot Value | $281,840.00 |

## THREE STREET FRONTAGE

When a lot having a high value on the front, a lower value on the side street and a still lower value on a street in the rear, has such depth that the point of merge would be less than 100 feet from the high valued street, proceed as follows:

Find the merge point (E); find the value of the lot for its width (C D) on the high valued street at the unit of the high valued street by its depth (C E) to the merge point (E); find the value of the rear of the lot by using the number of feet between the merge point and the rear of the lot (E B) as frontage on the side street and for a depth equal to the frontage on the rear street (A B) by the unit of the side street. For corner influence on the front corner, find the value of the lot for a frontage on the side street (C E) at the side unit equal to the length from the corner to the merge point by a depth (C D) equal to the width of the lot on the front street. For corner influence on the rear, find the value of the lot for its frontage on the rear street (A B) at the unit of the rear street and with a depth (B E) equal to the distance from the rear corner to the point of merge.

| | |
|---|---|
| 53.50 ft. x 98.3% (% for 96 ft. depth, front value) @ $400.00 equals | $ 21,036.00 |
| 96 ft. x 64.05% (% for 53.50 ft. depth, corner influence) @ $300.00 equals | 18,446.00 |
| 24 ft. x 75.12% (% for 53.50 ft. depth, side value) @ $300.00 equals | 5,408.00 |
| 53.50 ft. x 44.9% (% for 24 ft. depth, corner influence) @ $100.00 equals | 2,400.00 |
| Lot value | $ 47,290.00 |

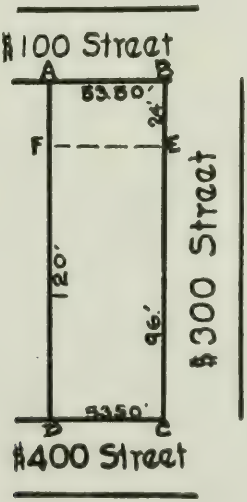


DIAGRAM 9

When a parcel of land having a frontage of less than 100 feet, on a high valued street has a rear frontage on a low valued street and is bounded on one side by a street having a value between the high and low valued streets and where the depth of the lot is such that if the point of merge between the high valued frontage and low valued rear would be a point greater than 100 feet, from the high valued street, proceed as follows: FIRST: Produce the value of the lot for its full width (A B, Dia. 10) for a depth of 100 feet (B E) at the high unit; deduct 100 feet in depth from the total depth of the lot and use the remainder (C E) as frontage on the side street. SECOND: Produce the value of the rear of the lot for its frontage on the side street (C E) by its depth (C D) by the side unit; THIRD: For corner influence, produce the value by using 100 feet as fronting on the side (B E) with a depth equal to the width of the lot on the main street (A B) by the side unit; also produce the value using the frontage on the rear or low valued street (C D) by the depth of the lot (C E) by the rear or low valued unit.

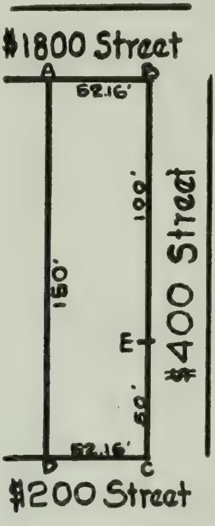


DIAGRAM 10

| | |
|---|---|
| 1st—52.16 ft. x 100% (% for 100 ft. depth, front value) @ $1,800.00 equals | $ 93,890.00 |
| 2nd—50 ft. x 74.12% (% for 52.16 ft. depth, side value) @ $400.00 equals | 14,820.00 |
| 3rd—100 ft. x 63.65% (% for 52.16 ft. depth, corner influence) @ $400.00 equals | 25,460.00 |
| 52.16 ft. x 63% (% for 50 ft. depth, corner influence) @ $200.00 equals | 6,570.00 |
| Lot value | $140,740.00 |

## TRANSMUTING CORNER TO INSIDE LOT VALUES

Realtors sometimes encounter difficulty in securing unit values for inside lots because the blocks in their cities are for the most part, 200 feet square. Inasmuch as 100 feet is regarded as the frontage of a normal corner lot, there are thus no inside lots to fix a unit upon, although sales of corner lots abound.

Newspapers frequently herald the great increase in land values as reflected by a large corner parcel, perhaps of unusual depth. Realtors frequently fix in their minds the running foot values derived from corner values, not taking the time to analyze the sale or lease for unit inside lot values. It becomes, therefore, increasingly necessary to analyze corner lot values and to transmute them to inside lot values—a process daily resorted to by some appraisers as to all sales and leases appearing in the daily newspapers.

Let it be assumed that a 99-year lease has been effected on a basis of $6000 rental per year for five years, $8000 for five years and $10,000 thereafter, making an average rental for the first twenty years of $8550, which, capitalized at 6 per cent, creates a value of $141,666. Let us assume the parcel is shaped as in diagram 11.

Here is a corner parcel of land 125 feet front by 150 feet deep, leasing on an average rental basis over twenty years capitalized at $141,616. The question is—What unit value for inside property does such a sale indicate? First, deduct the rear 50 ft. x $500 equals $25,000. We must assume a certain value for inside property on the side street, which in this case is assumed to be $500. This lot 50 ft. x 125 ft. being deeper than 100 feet, will be figured at 109 per cent for such added depth, which makes $27,250. Next deduct the corner influence 100 ft. at $500, which equals $50,000, at 72 per cent (Zangerle's corner per cent) equals $36,000. Total deduction $27,250 plus $36,000 equals $63,250, from $141,616 leaves $78,366 which represents the value for 125 feet or $627 per unit foot standard depth. What, therefore, appeared to show a value of $1134 running foot without analysis, on closer investigation shows a value of only $627 per foot standard depth. This again emphasizes the importance of standardizing sales and leases if one is to appraise land values intelligently.

When such a corner is improved with a usable structure the value of structure should be deducted from the capitalized value above indicated, viz., $141,616, before proceeding with the other deductions. When the lessee has agreed to raze the building or intends to do so and erect a more modern structure.

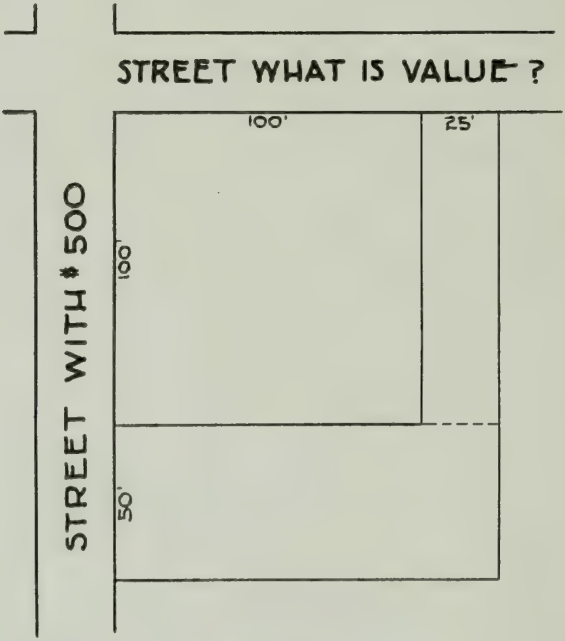


Diagram 11

such improvement value (except as to a nominal amount) should not be deducted.

When there are three street frontages, in other words, two corners, it becomes necessary, of course, to make further deductions for the other corners.

A copy of the form used in the County Auditor's Office, Cleveland, Ohio, to transmute corner lot values to inside lot values will be found in the addenda.

## CHAPTER 12

## APPRAISING IRREGULAR LOTS

Systems utilized—The zone method—Three frontage triangle —How to work out the problems—Technical methods employed.

In computing the value of irregular lots, cut them up into triangles, rectangles and parallelograms wherever possible.

A B C D Diagram 12 is a lot 186 feet front, 82 feet deep, and 90 feet rear. From the points D and C, draw lines to E and F, perpendicular to the line A. B. The lot A B C D will then be divided into the rectangle C D E F, 90 feet front, and the two right angle triangles A E D, which measurements show have a 50-foot base, and B F C, 46-foot base on the street. All these parts have a depth of 82 feet. This plan makes the following equations:

| | |
|---|---|
| C D E F, frontage 90 ft. x 91.89% (82 ft. depth) @ $500........ | $41,350.00 |
| Triangle A E D frontage 50 ft. x 91.89% x 63.2% (% when Triangle) @ $500........................................ | 14,520.00 |
| Triangle B F C frontage 46 ft. x 91.89% x 63.2% (is 82 ft. deep) @ $500 ........................................ | 13,360.00 |
| | $69,230.00 |

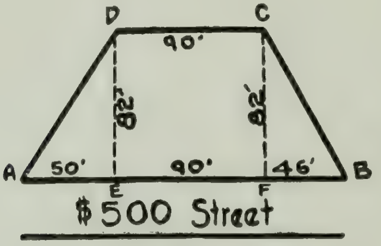


DIAGRAM 12

The triangular lot A B C (Dia. 13) has 145 feet front but no right angle nor perpendicular depth. From the point A, drop the perpendicular A D, making the right angle triangle A D C with 210 feet on street. From this plan you make the following equations:

Triangle A D C frontage 210 ft. x 105.78% (115 ft. depth) x 66.5% (% when triangle is 115 feet deep) @ $500 equals........$73,860.00

Less Triangle A D B frontage 65 ft. x 105.78% (115 ft. deep x 66.5% (% when triangle is 115 ft. deep) @ $500 equals... 22,860.00

Equals Triangle A B C frontage 145 ft. x 105.78% (115 ft. depth) x 66.5% (% when triangle is 115 ft. deep) @ $500 equals..$51,000.00

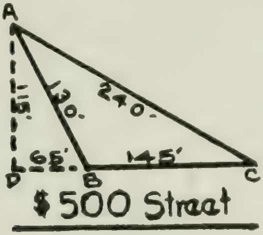


DIAGRAM 13

The above equations illustrate the following rule: The value of any triangular piece of land is its base in feet times the street standard unit changed to the correct unit by applying the proper percentage for the perpendicular depth.

Diagram 14 is a lot A B C D having no two sides parallel.

Prolong the street line A B to indefinite points on both sides of the lot; extend the rear line C D to the street making the line C E; from the points C and D draw the lines C F and D G perpendicular to the street. The value of the lot will be the value of C E F less the value of B C F and A D E as set forth in the following equations:

| | Ft. Front | Ft. Deep | % of Depth | % of Tri. | St. Unit | | |
|---|---|---|---|---|---|---|---|
| Tri. C E F | 326— | (168) x | 118.09 x | 71.26 @ | 100 | | $27,430.00 |
| Less | | | | | | | |
| Tri. B C F | 32— | (168) x | 118.09 x | 71.26 @ | 100 | $ 2,695.00 | |
| Tri. A D E | 204— | ( 82) x | 91.89 x | 63.2 @ | 100 | 11,845.00 | |
| | | | | | | | 14,540.00 |
| Land value of lot A B C D | | | | | | | $12,890.00 |

## ZONE METHOD

When it is impracticable to divide a lot into triangles, rectangles and parallelograms, the zone method is used for figuring value. To obtain the land value in this way proceed as follows:

Diagram 15 is an irregular lot with frontage A B of 80 feet and extreme perpendicular depth (AC) of 80 feet. Measure along the perpendicular depth and at every ten feet from the frontage draw lines parallel to the street, dividing the lot into eight zones. The width of these zones through their centers are used for figuring the value. The width of No. 1 zone is the distance between the side lines of the lot at 5 feet from the street; the width of No. 2 zone is taken at 15 feet from the street, etc.

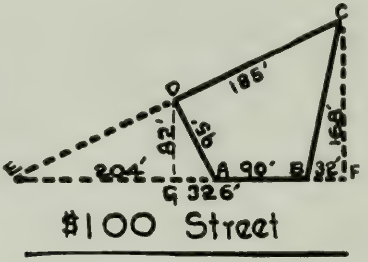


Diagram 14

Correct measurement of lot line may be made if parcel is sketched on cross-section paper. The correct unit for each zone is obtained by taking the proper per cent of the street unit according to the perpendicular distance from the front of the lot. No. 1 zone being the first 10 feet in depth will have for a correct unit 25 per cent of the street unit. No. 2 zone being the next 10 feet in depth takes 16 per cent (41%—25%) of the street unit for its correct unit, etc. (See Somers table for the per cent applied to each zone.)

The width in feet times the correct unit makes the value for each zone. Added together they make the total value of the land.

### VALUE

| | |
|---|---|
| No. 1 zone, 25 % of $100 or $25.00 x 81 feet average width...... | $2,025.00 |
| No. 2 zone, 16 % of $100 or $16.00 x 82 feet average width...... | 1,312.00 |
| No. 3 zone, 13 % of $100 or $13.00 x 83 feet average width...... | 1,079.00 |

| | |
|---|---|
| No. 4 zone, 10 % of $100 or $10.00 x 75 feet average width...... | 750.00 |
| No. 5 zone, 8.5% of $100 or $ 8.50 x 68 feet average width...... | 578.00 |
| No. 6 zone, 7 % of $100 or $ 7.00 x 66 feet average width...... | 462.00 |
| No. 7 zone, 6.1% of $100 or $ 6.10 x 48 feet average width...... | 292.00 |
| No. 8 zone, 5.3% of $100 or $ 5.30 x 15 feet average width...... | 79.50 |
| | $6.577.50 |

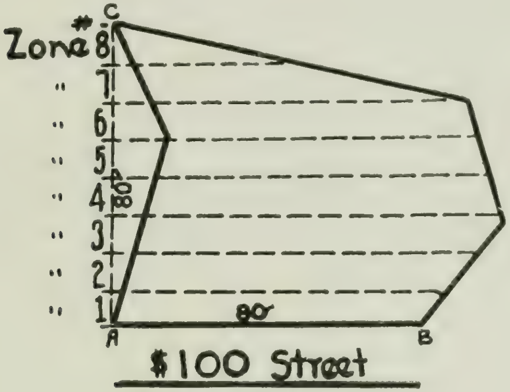


Diagram 15

When a lot has a frontage on a main street of more than 100 feet and a depth on a side street of more than 100 feet, as in Diagram 16, proceed as follows:

First: Find the value of the corner for a width of 100 feet, on the high valued street (A E), at the high unit for a depth of 100 feet (A G). Second: Find the value of the lot for the balance of its width (B E), at the value of the high unit for the full depth of the lot (B E H C). Third: Find the value of the rear of the lot lying back of the first parcel computed as though it had a frontage on the side street (D G) equal to the difference between 100 feet and the full length of the lot and for a depth of not over 100 feet (D H). Fourth: For corner influence, find the value for 100 feet front (A G) and 100 feet deep (A E) at the side unit. If the lot is irregular in shape, cut it up into rectangles, triangles, parallelograms or trapezoids, bearing in mind the dimensions as set forth for each example.

| | |
|---|---|
| 1st—100 ft. x 100% (100 ft. depth) @ $2,500.00 equals | $250,000.00 |
| 2nd—44.20 ft. x 119.46% (177.41 ft. average depth) @ $2,500 equals | 132,000.00 |
| 3rd—41 ft. x 96.3% (91.57 ft. depth) x 64% (tri. base on street) @ $1,500.00 equals | 37,900.00 |
| 86.48 ft. x 96.3% (91.57 ft. depth) @ $1,500.00 equals | 124,920.00 |
| 4th—100 ft. x 72% (% cor. infl. for 100 ft. depth @ $1,500.00 equals | 108,000.00 |
| Lot value | $652,820.00 |

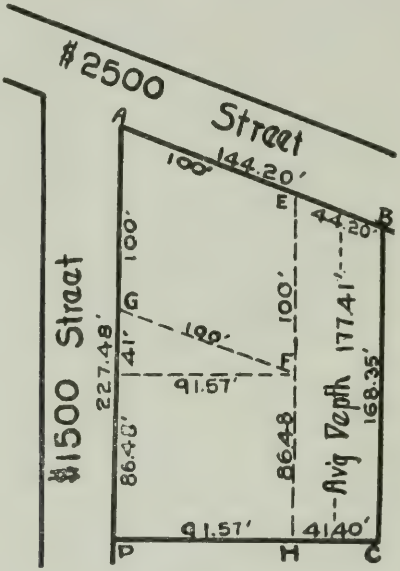


Diagram 16

## THREE FRONTAGE TRIANGLE

When a parcel of land is in the form of a triangle facing three streets, as in Diagram 17, find the merge point (D) between angle A and angle C (finding merge point explained Diagram 6). Draw a line (D F B) from this merge point (D) to angle B. Find a merge point (H) between angle A and angle B and draw a line (H F C) from this merge point (H) to angle (C). Draw a line (A F) between the remaining angle (A) of the parcel and the intersecting point (F) of the lines previously drawn.

Find the distance at right angles from each of the respective sides of the triangle to the point (F) where all of the merge lines cross. Compute the value of each of the triangles created (triangle A B F, No. 1; triangle B F C, No. 2; and triangle A F C, No. 3), using their base (A B for No. 1, B C for No. 2 and A C for No. 3) as the base line on each of the respective streets on which they rest; the right angle lines (F H for No. 1, F G for No. 2, and F I for No. 3) are the perpendiculars of the triangles.

Proceed as in all other triangulation.

| | |
|---|---|
| Tri. No. 1—435 ft. x 82.01% (% for 65 ft. depth) x 61.5% (65 ft. tri. %) @ $50.00 equals | $11,050.00 |
| Tri. No. 2—349 ft. x 107.50% (% for 120 ft. depth) x 67% (120 ft. tri. %) @ $75.00 equals | 18,850.00 |
| Tri. No. 3—334 ft. x 110.5% (% for 130 ft. depth) x 68% (130 ft. tri. %) @ $75.00 equals | 18,820.00 |
| Fig. 22—Total Value | $48,720.00 |

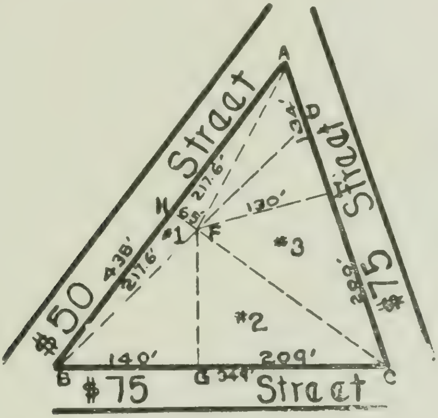


DIAGRAM 17

## TRIANGLE ON TWO STREETS

When a parcel of land has the formation of an acute angle, two long sides of which are bounded by different streets and the apex of which lies at the junction of the two streets, proceed as follows:

Find the points (A and B, Diagram 18) about equidistant on each side line from the apex (C) of the triangle where side lines will be intersected by a chord (A B) ten feet in length across said triangle; eliminate as unutilizable that part of the triangle; (A B C) between the chord and the apex; merge the value (point G 7½ feet from A, and 2½ feet from B) on the chord (A B) merge the value (point F 35.25 feet from E and 11.75 feet from D) on the full perpendicular depth (E D); connect these merge points (F and G) by a line (F G) and find the length of this line in feet (82.5); average the length of this line with the frontage on main street,

$$\frac{82.5 \text{ plus } 90.28}{2} = 86.39$$

average the length of the depth (E F) on the perpendicular and the length of depth (A G) on the chord

$$\frac{35.25 \text{ plus } 7.5}{2} = 21.37$$

Proceed to find the value of this presumed rectangle (86.39 feet x 21.37 feet) by multiplying the unit ($1200) by the percentage (43.04%) representative of its depth (21.37 feet) by the length of the rectangle (86.39 feet). Proceed to find the value (of B D F G) and size of a presumed rectangle lying between the merge line (F G) and the line (B D) of the low valued street, and bounded at the ends by the perpendicular (D F) and the chord (B G) as in the former instance. Add the two results together for the value of the lot.

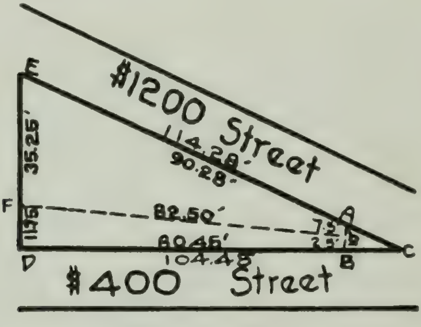


DIAGRAM 18

(A E F G) average front 86.39 ft. x 43.04% (% for average depth 21.37 ft.) @ $1,200.00 equals....................$ 44,620.00

| | |
|---|---|
| (B D F G) average front 81.47 ft. x 19.33% (% for average depth 7.13 ft.) @ $400.00 equals........................ | 6,300.00 |
| Value of lot........................................ | $ 50,920.00 |

While the foregoing represents the proper technical method of appraising such corner lots—a triangular lot with an acute angle on two streets—it may be stated in general that such corners, when the angle is very acute, may over-value the property. Indeed, in many such cases the point for a considerable distance is worthless, except for public use. Such lots may be so narrow as to preclude the possibility of constructing a tenantable building and render necessary special consideration regardless of rule.

# CHAPTER 13

## GRADED UNITS

Method for determining the value of a very deep lot on a corner—Value of typical parcels—The Somers curve extended—Restricted lots—Alleys and the value they add to land.

When a lot having a frontage of more than 100 feet on a high valued street is of a depth of 500 or 600 feet along the side street, whose unit values grade away after passing a point 200 feet back from the front of the lot, and when it has a rear fronting on a very low valued street, proceed as follows:

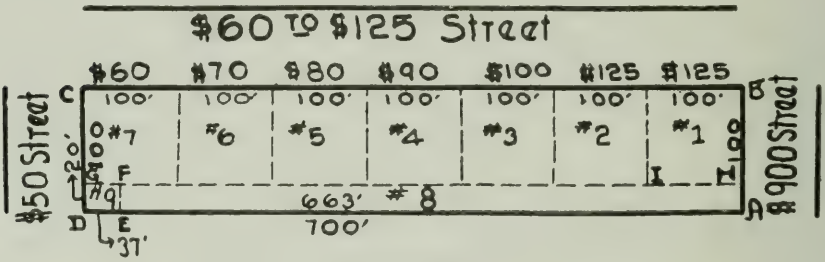


Diagram 19

Find the merged point (E) between the high and the low value; find the value of the lot (No. 1) for a frontage (B H) and a depth of 100 feet (B J) at the unit ($900.00) of the high valued street. For corner influence, find the value of the parcel having 100 feet frontage (B J) on the side street using a unit of the first 200 feet and for a depth of 100 feet (B H). Cut the remainder of the lot into parcels (No. 2 to No. 7 inclusive) each having 100 feet frontage on the side street, and having a depth of 100 feet. Find the value of each of these portions or parcels as inside lots facing on the side street, using the unit as scaled down that would apply to each particular portion. For corner influence in the rear, find the value of the parcel having 100 feet front on the rear street (C G) at the unit ($50.00) for that street for a depth (C K) of 100 feet. Where the values are under

$200 see semi business table for corner influence. Produce the value of the remainder (A D G H) by multiplying the unit on the high valued street by the percentage given for the depth (A E) back to the merge point (E), by its width (A H); produce by the same method, the value given by using the rear unit and the depth (D E) back to the merge point (E).

Fig. 18

| | |
|---|---|
| Lot No. 1—100 ft. x 100% (% for 100 ft. depth, front value) @ $900.00 equals | $ 90,000.00 |
| Lot No. 1—100 ft. x 72% (% for 100 ft. depth, corner influence) @ $125.00 equals | 9,000.00 |
| Lot No. 2—100 ft. x 100% (% for 100 ft. depth, front value) @ $125.00 equals | 12,500.00 |
| Lot No. 3—100 ft. x 100% (% for 100 ft. depth, front value) @ $100.00 equals | 10,000.00 |
| Lot No. 4—100 ft. x 100% (% for 100 ft. depth, front value) @ $90.00 equals | 9,000.00 |
| Lot No. 5—100 ft. x 100% (% for 100 ft. depth, front value) @ $80.00 equals | 8,000.00 |
| Lot No. 6—100 ft. x 100% (% for 100 ft. depth, front value) @ $70.00 equals | 7,000.00 |
| Lot No. 7—100 ft. x 100% (% for 100 ft. depth, front value) @ $60.00 equals | 6,000.00 |
| Lot No. 7—100 ft. x 30% of 72% (corner influence when 100 ft. deep and high unit $60.00) @ $50.00 equals | 1,080.00 |
| Lot No. 8—20 ft. x 141.8% (% for 663 ft. depth, front value) @ $900.00 equals | 25,520.00 |
| Lot No. 9—20 ft. x 61.25% (% for 37 ft. depth, front value) @ $50.00 equals | 610.00 |
| Total land value | $178,710.00 |

## INSIDE LOTS AFFECTED BY CORNER INVASIONS

When an inside lot, carrying a part of the corner influence, is at a different angle from the corner lot, proceed as follows: Cut from the inside lots (Parcels No. 1 and No. 2, Diagram 20) such portion as will make the complete 100-foot square (A B E F) for corner influence. Then find the value of the inside lot (No. 1 I K L M) on its front unit. Then create a parallelogram (A G H I) whose width (A I) is the difference between (100 feet) corner influence and (75 feet) the distance from the corner (F) to the point (I) of the beginning of the lot (No. 1). The depth (A G) of the parallelogram (A G H I) is the distance from a point (A) where the line (A B) of the parallelogram (A B E F) intersects at (G) the lot line (I K). Then find the corner influence of the parallelogram (A G H I) one-half of which will be the corner influence of the lot (No. 1).

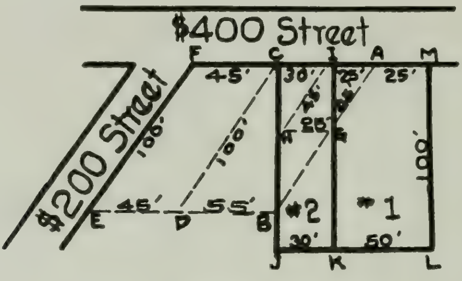


Diagram 20

## VALUE OF PARCEL NO. 1

| | |
|---|---|
| 50 ft. x 100% (% for 100 ft. depth, front value) @ $400.00 | $20,000.00 |
| 45 ft. x one-half of 3% (% for 100 ft.—75 ft. depth, corner influence) @ $200.00 equals | 140.00 |
| Value of Lot No. 1 | $20,140.00 |

In Fig. No. 20 we also have lot No. 2. To calculate its value proceed according to the above rule. First, find its front value, $12,000. Then add the value $1130 for corner influence A B C on parcel and subtract $140, the value of the corner influence A G I, which portion was charged to Lot No. 1.

## VALUE OF PARCEL NO. 2

| | |
|---|---|
| 30 ft. x 100% (% for 100 ft. depth, front value) @ $400.00 | $12,000.00 |
| 100 ft. x one-half of 11.3% (% for 100 ft.—45 ft. depth for corner influence) @ $200.00 equals | 1,130.00 |
| | $13,130.00 |
| Less above triangle A I G: | |
| 45 ft. x one-half of 3% (% for 100 ft., 75 ft. depth, corner influence) @ $200.00 equals | 140.00 |
| Value Lot No. 2 | $12,990.00 |

## SOMERS CURVE EXTENDED

Sometimes it is necessary to figure the value of an inside lot that is over 700 feet deep. If the width, shape and location is such that it could not be laid out into an allotment (Fig. 21), produce its value by extending the percentage of the Somers curve; in other words, add the per cent for each 100 feet or part of 100 feet that is added for the same number of feet between the 700 and 600 feet depths. According to the depth table 140.55 is the percentage for 600 feet and 142.35 for 700 feet depth. The difference between these per cents equals 1.8 per cent; this amount is to be added to the percentage for 700 feet for each additional 100 feet in depth, making 800 feet 144.15 per cent, 900 feet 145.95 per cent, etc. If the added depth is only part of 100 feet it takes an added percentage equivalent to the percentage for the same number of feet last shown on the table, figuring back from 700 feet. For 10 feet add 0.15 per cent, for 20 feet add 0.03 per cent, etc. See Diagram 21.

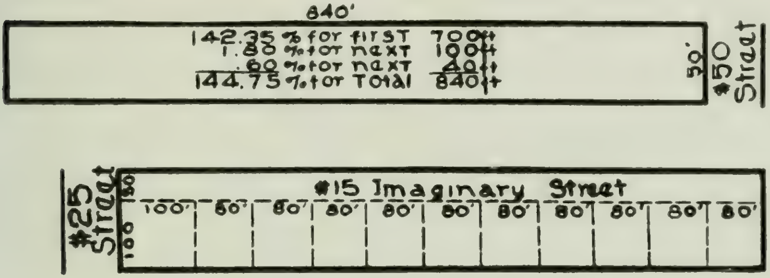


DIAGRAM 21 (ABOVE) DIAGRAM 22 (BELOW)

If the parcel of land has the proper shape and location (Diagram 21) for an allotment, lay out imaginary streets and lots abutting thereon suitable to the neighborhood; fix proper units for the imaginary streets; compute the value of lots facing on said streets and add the total value of all the lots to get the true value of the entire parcel. See Diagram 22.

| | |
|---|---|
| Front on established street, 100 x 100% (100 ft. depth) @ $25.00 equals | $ 2,500.00 |
| Front on imaginary street, 800 100% (100 ft. depth) @ $15.00 equals | $12,000.00 |
| Diagram 22.—Total Land Value | $14,500.00 |

## RESTRICTED LOTS

A most difficult appraising and assessing problem is the proper treatment of restricted lots. A restriction in some cases adds value to property, such as residential restrictions maintaining it for exclusive home purposes. Such property in later years frequently becomes available for apartments or stores. The property originally may have been worth $100 per foot, gradually developing into apartment sites at $300 per foot or retail store sites with much higher values. In such case the restriction becomes an undesirable encumbrance. Is the property then worth the value of its restricted use, or is it worth to the owner one sum, to the restrictor another sum as the value of the restriction and to the state for assessment purposes another sum? How shall it be valued or assessed? The realtor, of course, will go into details, into the legal effects of the restriction, probability of avoidance of the restriction by the court, availability for higher utility, in short, an examination of grantor's or restrictor's estate separately from that of the grantee.

Whatever may be the most accurate method, experience soon convinces one that a consideration of the value or burden of the restriction is impossible in any extensive plan of assessment within a limited time. A deduction or increase in value of restricted lands involves a careful reading of each restriction, a conclusion as to its permanency; whether personal or running with the land; a knowledge of legal phraseology and conclusion as to its legal sufficiency; investigation as to its possible termination, either in point of time or change of use, as may be ordained by the courts. Then, too, in restrictions that are personal, the value resides somewhere. Any day the restrictions may be released. The owner should be discovered and assessed for this temporary interest as personal property, if the fee may not be taxed unencumbered.

Complaint was lodged with the board of revision of Cuyahoga County, Ohio, by the University Club of Cleveland as to the assessment of its property on Euclid Avenue near E. 40th Street. The owner, residing next door, gave the club a 99-year lease at $5500 per annum with an option to buy at $110,000, the lessee agreeing to use the premises for residential and club purposes only. Since the time of the beginning of the lease, Euclid Avenue, formerly held exclusively between E. 22nd and 40th Streets for high-class residences, is changing and being gradually utilized for business purposes. The assessor in 1922 assessed the land value at $510,850. For business purposes the land was worth about $2000 per foot and the residence almost worthless. It was assessed, as neighboring land was being sold, namely, at about $2000 per foot, which represented its business utility. The University Club having since 1910 exercised its option and purchased the fee at $110,000, owns a lot which it can sell subject to said restrictions. The assessor contended that the highest utility was a business utility; that the value of the land was there and that he was not concerned as to where the value resided, whether in lessor or lessee. He contended that the restriction might at any time be released by the former owner or by the court, which is frequently done where a neighborhood undergoes a change of utility.

The following decision is of interest, in this connection:

"Courts of equity have uniformly refused to interfere for the purpose of enforcing the restrictive covenants in cases where the evidence shows that a state of things has arisen in the march of events which the parties to the agreement did not contemplate when it was made, but which would render its enforcement inequitable and unjust, resulting in injury to the defendant without any permanent benefit to the complainant."

"Where the purpose of the restrictions as a whole was to make the locality a suitable one for residences; and owing to the general growth of the city, and the present use of the whole neighborhood for business, the purpose can no longer be accomplished even if all the restrictions should be rigidly enforced, it would be oppressive and inequitable to give effect to the restrictions, and to enforce them would only harass and injure the defendant, and equity will not enjoin their violation." Jackson v. Stevenson, 156 Mass. 496, 31 N. E. 691, Am. St. Rep. 476 (1892).

## ALL INTERESTS IN LAND MUST BE ASSESSED

The larger question in the first mentioned case, however, was rather whether it was the duty of the assessor to assess this property as it is being used and as it was being restricted for club house purposes or whether he ought to have appraised the same without consideration of this restriction and encumbrance (because this restriction is an encumbrance just as much as a mechanic's lien or a judgment lien or a mortgage debt). While a number of cases may be found to the effect that the assessor must deduct debts or other encumbrances in valuing real estate, these cases will be found upon examination to arise from states where the statutes require a separate valuation of real estate by deducting the mortgage encumbrance. However, it will be found that the courts upon several occasions have decreed that real estate shall be assessed at its full value and that the amount of debt secured by a mortgage thereon cannot be deducted. See Territory v. Delinquent Tax List, 24 Pac. 182; Allen v. Hartford Co. Com., 74 Md. 294, 22 Atl. 398. That a restriction against the use of real estate is an encumbrance quite as much as a mortgage. See Anonymous 2 Abb. N. C. (N. Y.) 56; Williams v. Hewitt, 57 Wash. 62, 106 Pac. 496 (1910).

The assessor's appraisal on appeal to the board of revision and finally to the state tax commission was sustained. It is, however, now pending in the Court of Common Pleas on error.

The case of Lodge et al. v. Inhabitants of Swampscott, 216 Mass. 260, apparently holds to the contrary. That is to say, it holds that appraisals must be made on the basis of its authorized use and not on the basis of its unencumbered use. "The deed involved in this case contained a provision that 'no structure of any kind shall be erected' on a certain area. The complainant contended that this, being a valid restriction, was in the nature of an encumbrance on the land; and since such a restriction decreased the value of the land, the appraiser should take notice of this and reduce the taxation value."

"Held, if, by reason of a provision in a deed of land prohibiting the erection of any structure upon a certain portion of the land, the fair cash value of the entire estate is diminished, the land should be assessed for taxation at such diminished value, irrespective of the manner in which or the persons by whom such provision should be enforced. To assess this property without regard to the restriction would be to assess it for an amount in excess of its fair cash value and in violation of the statute. No doubt assessors cannot be compelled to inquire into all the details affecting the title to property, but when their attention is duly called to matters relating to its value they are bound to pay proper regard to them."

## ALLEYS

Alleys should have units assigned when lots have only such accessibility, and when they have a unit value assigned should be treated as streets regardless of their width. If the alley does not have a unit assigned, then add one-half of the width of the alley to the lot, either as an addition to its width or to its depth, according to where said alley is situated.

Example: Lot 50 feet wide and 100 feet deep has 12-foot alley in rear. Add one-half of side alley to lot as width and make lot 50 plus 6 or 56 feet wide. Add one-half of width of alley in rear to length of lot and make lot 100 plus 6 or 106 feet long.

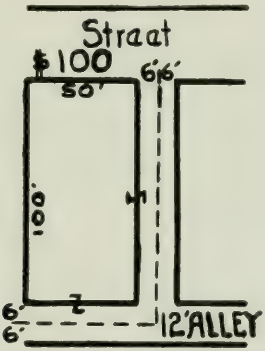


Diagram 23

Complete frontage 56 feet x 102.48% (106 feet full depth) @ $100 = $5,738.88 or $5,740.

The above rule applies to business or semi-business property.

No addition is made to the value of residential property for side alley influence. When an alley runs along the side of a residential lot it frequently decreases its value.

## LOT LINES IRRELEVANT

In calculating corner influence, appraise the entire area within the 100-foot frontage on both the main and side streets irrespective of lot lines. Apply the frontage value on the main street and corner influence from the side street in figuring the value of each lot.

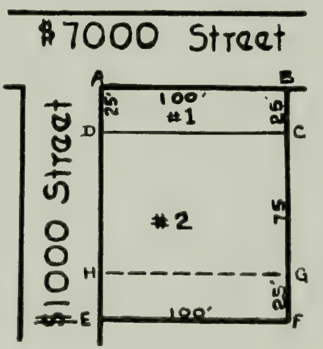


Diagram 24

To illustrate: Diagram 24, A B C D parcel No. 1 and C D E F parcel No. 2 are within the corner influence at the intersection of a $7000 main street and $1000 side street. The following equations make up the lot value of parcel No. 1:

| | |
|---|---|
| Frontage 100 ft. x 47.9% (% for 25 ft. depth) @ $7,000 front value | $335,300.00 |
| Frontage 25 ft. x 72% (% when 100 ft. depth) @ $1,000 corner influence | 18,000.00 |
| Lot value | $353,300.00 |

To find the value of parcel No. 2, first mark off the portion of the lot within the 100-foot corner influence (C D H G). Produce its front value at the high unit $7000 by multiplying the same by the number of feet in side (C D) parallel with main street and the percentage for depth (B G less B C or A H less A D)—which makes 100 per cent (100 feet depth) less 47.9 per cent (25 feet depth) equals 52.1 per cent. Second: Figure the corner influence by using the above depth (D H) in feet (75) as frontage and the proper percentage (72%) for depth (C D).

Third: Figure the balance of lot (E F G H) as facing the side street.

| | |
|---|---|
| 1st—100 ft. x 52.10% (% after deducting 25 ft. from 100 ft. front (value 100 ft. x 75 ft.) @ $7,000 equals | $364,700.00 |
| 2nd—75 ft. x 72% (% for 100 ft. depth, cor. infl. 75 ft. x 100 ft.) @ $1,000 equals | 54,000.00 |
| 3rd—25 ft. x 100% (% for 100 ft. depth, side value 25 ft. x 100 ft.) @ $1,000 equals | 25,000.00 |
| Parcel No. 2 value | $443,700.00 |

## CHAPTER 14

## RENTALS — EVIDENCE OF CAPITAL VALUE

How to transmute rentals into capital value of land—Shall five years or longer be used as the basis for capitalization? —Leasehold valuation methods compared, according to the present worth method—The capitalization method—Deferred payments versus cash purchase—Is there a differential?

Nothing has aroused such acrimonious discussion as the proper method of transmuting rentals into capital value of land. The 99-year leasehold is the prevailing tenure system in many cities of down-town retail property. Parcels, sometimes improved, are leased on a rental fixed for the entire term. Sometimes the rental is based on a decennial appraisal to be established by arbitration. More often the rental rises in steps, perhaps every five or ten years for a period of twenty or thirty years, thereafter the rental remaining stationary.

Given certain rentals under a long-time lease, what evidence do such rentals tend to show regarding the true value of the property? Does such capitalization differ from the real or true value of the property? It is urged, on the other hand, that leases tend to raise land values, that they are negotiated on a somewhat higher basis than are cash sales and that the true value is therefore less than such resulting capitalization. Similarly, it might be urged that the ability to borrow money facilitates transactions in a greater amount of property. The cash value would become conjectural. So, it is maintained the 99-year lease facilitates deals, control and finance by more people. The market becomes broadened. The lease perhaps facilitates borrowing of money on it. What the cash value would be without these facilities is impossible to determine. It may be admitted, and is undoubtedly true to some extent, that all real property sells for a higher price in view of these facilities than it would if cash were required. Just as it is true that the market for everything is broadened through the adoption of the Federal Reserve System whereby credit channels are opened up.

Those who depreciate or minimize the value of this kind of testimony always insist that sales of property alone should control, that sales are the only proper evidence of the true value of money, probably knowing that there are few or no sales. Indeed, it is probable that if the occasional available sales were analyzed and if it were shown that a sale involved the assumption of a large mortgage or a small down payment—it is probable that such evidence would be impeached as involving a "shoe string" transaction and, therefore, not properly indicative of the true value in money in such lands. Under an act for the levying of taxes passed in the year 1846 by the Ohio Legislature, and subsequently amended, it was provided that assessors ascertain the amount of rents reserved in any leases for a term of years exceeding 14 years thereafter renewable; and that the value be fixed by taking a principle sum, the interest of which, at the legal rate per annum, would produce a sum equal to such annual rentals. This law was held constitutional in David Loring v. State of Ohio, 16 O. S. 590.

The true value must be that value (expressed, of course, in terms of money) for which property will sell in the market under usual terms (namely, one-half cash and one-half time), by way of leasehold, fee, mortgage, land trust certificates or otherwise. Surely property is worth what it will produce in income. If there be no security or if there be doubt about the sufficiency of the security the evidence becomes of little value. Changes in the market rate of money for such investments will also require changes in capitalization rate.

Any other construction than the above would lead to ridiculous results. For example, a property leasing for $6000 per year at 6 per cent would be worth $100,000, if well secured. What investor would say the "true value" of the property is $70,000 (using a differential of 30 per cent)? Where is the broker who can supply such bargains?

Opinion evidence is frequently submitted showing that a differential is necessary. Far better evidence is available and indeed more pertinent. The necessity for a differential might be shown in two ways. First, by showing that fees subject to a lease sell at a discount compared with a capitalization of the rent at 6%. Second, that owners offer to sell property at a figure for cash (or cash and time) at a figure substantially less than a capitalization at 6% of the rental. Such evidence of actual offers heretofore made (not for tax reduction purposes) in the regular course of business would furnish a material contribution to the subject matter.

Evidence of a sale of property on January 1, together with the execution of a lease thereof six months thereafter, or even the same day, from the buyer to a third party would be no more evidence of the need for a differential than a subsequent sale at a higher price compared with a former sales price would show a differential of the second sale to secure evidence of "true value."

If a fee would actually sell for less than a capitalization of the rentals under a long time lease, it would seem that lessors, at least occasionally, would give the lessees a short time option to purchase the property at such lesser value. In the illustration heretofore given of property leasing for $6000 per year under a well-secured lease, if this property in the opinion of the lessor (being the owner) is worth only $70,000, a person would think that in some of these leases occasionally there would be an option for a period of a month, three months, six months or a year to buy at $75,000 or $80,000. This would be of distinct advantage to the lessor in that he would get more under the option price than the property is worth in the opinion of some real estate experts. It would also be of advantage to the lessee in that he could purchase the property, thereby cutting down his own interest rate. The fact of the matter is that owners of property generally prefer a well secured 99 year lease to a cash sale. The latter involves difficulties of re-investment, danger of losses, burdensome taxes, etc.

It is, of course, admitted that market conditions of money may render a first class lease subject to discount or, on the other hand, a premium. It is also admitted that lessors require a higher rate of interest rental as to property in less favorable sections.

P. W. Kniskern, summed up this matter remarkably well before the Mortgage and Finance Division of the National Association of Real Estate Boards at the Washington Convention in 1924 as follows:

> "Having determined the net rental value of income to the owner, we next have to determine the rate at which this annual profit should be capitalized. We believe some very good authorities have fallen into the error that a fixed rate of capitalization on like properties can be used in all communities. ~~Six per cent~~ is not a correct rate for capitalizing income on all properties in ~~all cities or in all towns~~. The correct rate is that common to the locality in which the property is located and is the rate necessary to attract buyers or investors to real estate. There will not only be a variation in cities, but also a variation in different classes of property and in some cases a variation in the same city."
>
> "Rate of capitalization will tend to be the same on properties of the same class. But do not be deceived, by this fact, into believing that the rate is controlled by the class of the property. Such is not the case. The rate of capitalization is a function of, and is controlled by, the characteristics of the income and of the security."
>
> "The determination of rate fundamentally goes back to what is accepted as the soundest and safest investment to any one in this country, the government obligation. Every other type of investment must pay higher rates in proportion as it varies from the government obligation in the term, security, certainty of interest payment, hazard, worry and physical activity required of the investor in management or attention. So we find ascending rates of interest accepted as we go from government bonds to savings banks, to railroad bonds, preferred stocks, common stocks, one's own business, and oil speculations. The liquidity, or ability to sell quickly for cash, affects this so that listed securities are apt to pay a lower rate than unlisted, other things being equal, similarly those in active demand as compared to an inactive demand."

The following tend toward a low capitalization rate:

Property in good condition.
Well built—slow deterioration.
Active location.
Subject to slow obsolescence.

Stable location.
Assured increased value in future.
Low reserved rent compared to present rental value.
Multiple tenancy.
Long leases.
Strong well established tenants.
High class occupancy.
Certain estate or interest.
Rents well secured.
Property attractive to many buyers.
Convertibility and utility to many classes.
Suitable for necessities.

The following points tend toward an increased capitalization rate:

Property in run down condition.
Poorly built—rapid deterioration.
Inactive location.
Subject to rapid obsolescence.
Transition or speculative future uncertain.
Reserved rent equal or closely approaching rental value.
Single tenancy (unless very strong in a well established line.)
Short leases.
Weak tenants or tenants just starting business.
Questionable occupancy.
Uncertain estate (as one depending upon life or lives).
Attractive to few buyers.
Special purpose and non-convertible.

How does one capitalize rentals to arrive at capital value? Until recently few legal adjudications were available as to how leaseholds are to be capitalized for the purpose of arriving at the true value of the property.

The decision of Judge Barnes in the case of the appraisal of property of Lassman in the Common Pleas Court of Cuyahoga County, Ohio, is relied upon by those seeking to dissipate the commonly accepted values as deducible from leases. Judge Barnes, however, did not set forth any general way in which to capitalize leases or to arrive at the value of property from leasehold data. He capitalized the rentals covering the entire term and then allowed a differential of 10% or 15%, and used 6% as a rate of capitalization. The decision is notable, therefore, in that Judge Barnes did use 6% as a capitalization rate and that he did capitalize the entire term. See also Metropolitan Building Co. v. King Co., 113 Pac. 114.

Recently in a case before Judge Wolfe of the Cuyahoga County, Ohio, Court of Common Pleas, the court was called upon to determine the market value of certain lands on Ontario street which were under a 99-year lease. Judge Wolfe capitalized the rentals accruing during the entire term (instead of the current year merely), allowed no differential and used a 6% rate of capitalization. In the Probate Court the property was appraised on a higher basis, the probate judge using a five per cent capitalization rate, he contending that the statute thus required.

While the foregoing cases indicate the method employed by Cuyahoga County, Ohio, courts for arriving at the true value in one case and at the market value in the other, section 5330 of the General Code of Ohio provides a specific method in analagous cases, that is to say, it provides for the method of arriving at the value of lands subject to a term of years renewable forever for taxation purposes as follows:

> "Whenever school and ministerial lands are held under perpetual lease, subject to revaluation the interest of such lessees in such lands shall be subject to taxation. In determining the value for purposes of taxation in such leasehold interest, the true value of money shall be ascertained, the annual rent reserved in the lease shall be capitalized on a 6% basis and that sum deducted from the true value of the lands in money; the result so obtained plus the value of all the improvements upon such land shall be the appraised taxable value of such leasehold interest.'

Here is statutory sanction for a 6% rate of capitalization, regardless of the market value of money. It allows no differential. Altho it refers particularly to school and ministerial lands held under perpetual lease subject to revaluation, no difference can be found in the principle between that class and other mercantile lands and no reason can be found for differentiating in the method of capitalizing the one as compared with the other. In directing a use of a common rate of capitalization, the statute violates good sense and departs from the market value.

Another indication of the proper method of arriving at the capital value of property as deduced from the ground rentals is the method employed by real estate boards and realtors in general in arriving at their commission charged in negotiating the sale of such ground rents. The Cleveland Real Estate Board provides: "On sales of ground leases and improvements, the commission shall be figured: First, the board rate upon the value of the land, as determined by capitalizing the average ground rental for the entire term of the lease, but not to exceed ninety-nine years at 6%, plus the board rate on the consideration paid for the lease and improvements."

This subject has received official consideration by the Court of Appeals in the State of New York where it was determined that the value of taxable rents reserved shall be estimated at a principle sum, the interest of which at the local rate per annum would produce a sum equal to such annual rents. (177 N. Y., page 23. 68 N. E., page 994.)

The main bone of contention, however, is, shall only the first five years' rent be capitalized, or shall a longer period be considered. By way of illustration, taking a land lease calling for $4000 per year for five years, $6000 per year for five years, $8000 per year for five years and $10,000 per year for the remainder of the 99-year lease term what is the value of the land? Shall the first $4000 be capitalized at 6 per cent, for example, making a value of $66,000? If the lease is well secured, the investor would be fortunate in being offered the fee subject to such leases on such a valuation. Should the average then for the first ten years be taken, making a value of $83,333? Or should an average of twenty years be taken? Or should the present worth of the entire period be taken? From an investment standpoint, the latter is the only scientific manner to get lessor's present value of his future rentals. This, of course, includes the speculative as well as present value. But a cash sale includes the same elements.

Take a concrete case and compare the two methods of deducing capital value from ground lease rentals, first, by calculating the present worth of the entire term, and second, by capitalizing the first ten years only.

## LEASEHOLD VALUATION—METHODS COMPARED

Example: Assume a well secured 99-year lease with graded rentals, $5000 per year for the first three years, $7500 per year the next three years, $10,000 per year the next three years and $12,000 per year thereafter. Then arrive at the value under the two methods as follows:

| | Rentals | Present Worth Factor | Present Worth |
|---|---|---|---|
| 1st year | $ 5,000 | .943396 | $ 4,716 |
| 2nd year | 5,000 | .889996 | 4,449 |
| 3rd year | 5,000 | .839619 | 4,198 |
| 4th year | 7,500 | .792094 | 5,940 |
| 5th year | 7,500 | .747258 | 5,347 |
| 6th year | 7,500 | .704961 | 5,287 |
| 7th year | 10,000 | .665057 | 6,650 |
| 8th year | 10,000 | .627412 | 6,274 |
| 9th year | 10,000 | .591898 | 5,918 |
| 10th year | 12,000 | .558395 | 6,700 |
| 10 years | 78,000 | | 55,479 |
| 89 years | 12,000 | Annual 9,307 | 111,684 |
| 99 years | Present Worth Value | | $167,163 |

In the above calculation $16,667 is taken as the permanent annuity factor, that is, the present worth of a permanent annuity of $1.00 is found by calculation to be $16.667. See addenda. The annuity factor for 10 years is $7.360, leaving therefore an annuity factor of $9.307 as representing the present worth of a permanent annuity of $1.00 annually after 10 years which multiplied by $12,000 rental for the first ten years makes $111,684. This amount added to the aforesaid $55,479 makes the present worth value—$167,163.

## CAPITALIZATION METHOD

An average of the first ten years rental is $7,950. This amount capitalized at the permanent annuity factor of $16.667 amounts to $132,500. In other words, the capitalization method in round numbers under-values the property approximately $35,000, which represents an under-valuation of almost 33 1/3 per cent. Capitalizing the average rentals for the first twenty years instead of the first ten years, it results in an under-capitalization of but 1 per cent. This is because there is an increase of rental after nine years, which substantially increases the average capital to be capitalized.

In advising the more accurate method of calculating the present worth of each prospective payment, one has in mind that some leases have a heavy initial period, such as $6000 per year for 5 years and $5000 per year for the remainder of the term Some leases rise very rapidly within a short period of five or ten years and then stop. Others are fixed definitely for 99 years. Others step up for 30 or 40 years. Under all these circumstances, no method will do justice to all these cases except accurate calculation. Indeed, discriminations and inequalities would necessarily result. Present worth tables of annuities are shown in the addenda, with explanations.

In analyzing a lease to discover the real value of the property, is allowance to be made because the transfer is by way of leasehold and not by fee? For example, if a long lease is effected on a basis of $6000 per annum for 99 years, may it be assumed that the property is worth $100,000 because the owner is to get 6 per cent (the assumed market rate for securities of that kind) for 99 or more years? Or shall one say that had the owner sold his property and not leased it, he would have received $80,000? In the opinion of some experts, no differentiation is permissible. If a 20 per cent differentiation is to be recognized, it must be either because the terms are burdensome, or the rentals are not well secured, or because the lease is effected on a 6 per cent basis, while the market rate of money for such investments may be 20 per cent greater, or 7.2 per cent. It is even known that properties leased on a 6 per cent basis have sold, after the execution of the lease and in times when funds were more plentiful on a 5 per cent basis. This certainly shows that if a lease is executed at the market rate of money for similar securities, the cash value and the capitalized lease value should be identical.

From the standpoint of the buyer, deferred payment by way of lease and option is much preferable to a cash sale. Undoubtedly he would be willing to lease on a higher capital land value. But we have a counter influence in the case of the landlord. Due to the national income tax on any increment made, many owners prefer a lease to a cash sale, especially when they have in mind that such rentals are usually exempt from state taxation and when the rental is on a 6 per cent basis where other investments of like yield are far more hazardous from the point of management and security.

That the lease tenure opens up a field of new buyers, requiring less funds is true. That this tends to increase lease values is also true. But the quantity of money, the ease of credit generally, the availability of large funds on mortgage—all these render all lands more valuable. They affect all land equally. Even then, it should be remembered that buying land at $100,000, securing a $75,000 loan on mortgage from a bank and putting up $25,000 is little different, in point of financing, from leasing the property at 6 per cent on $100,000 and putting up $25,000 securities. If the lease is well secured in a good location, there is not much room for differentiation. If the lease is not well secured or is in a relatively poor location or of uncertain performance a new factor involving the appraiser's judgment arises. If the security is not easily available, or requires a law suit to secure, the assumption of "well secured" is not applicable and the appraiser must allow for the variation from an ideal case.

Extreme caution must be exercised in capitalizing ground rentals that the lease represents a bona fide transaction uncorrupted by extraneous influences. Occasionally a sale and lease will be effected which will resemble the wash sale in direct sales. A will own a poorly improved parcel of land. B will buy it, say for $75,000. He will trustee it to C who will sell it to D for $100,000, B agreeing to take a lease from D for 99 years at $6000 per annum. B will lease $25,000 in the hands of C (the profit made) to be used towards the erection of a building. D feels secure in that he has the original land worth $75,000, plus $25,000 cash, or eventually, a building in lieu thereof. In effect B bought the land for $75,000 and mortgaged it plus a building to be erected to D for $100,000 at 6 per cent. But the real sale was at $75,000 and the $6000 rental capitalized at 6 per cent would evidence a greater value than it would have sold for without the lease and security inducement.

If a differentiation were allowed, very incongruous conditions might arise. For example, a parcel is sold for $100,000 and leased a few months afterwards at $6000 or $7000 for 99 years. If a differentiation of 25 per cent should be allowed in appraising such property on leasehold evidence of value, we would get a lower value as the "true value" than the cash sales value.

Aside from the controversy whether rentals under leases should be given less weight as evidence of value than a sale, it must be obvious that the terms of the lease, its security, general desirability as well as its burdens, the market rate of money, amount of taxes, etc., fix the value of the property. The important question is what will such a fee sell for with such a lease on it.

Even a sale may be padded. It may be based on a small down payment—a smaller payment in fact than may be made under the lease. All sales are not for all cash. A transaction may, therefore, be a sale but in fact involve less cash, perhaps less security, to the owner than a lease with security for an added structure.

## CHAPTER 15

# APPRAISAL OF LEASEHOLD ESTATES

Puzzling problems in appraising long term leaseholds—Such method of tenure becoming common—The capitalization rate, and the theory controlling it—Twelve typical appraisal problems of lessee, lessor, sub-lessee, sub-lessor and fee estates subject thereto and their answers—Use of present worth of money tables.

Appraising long-term leaseholds is, perhaps, one of the most complicated and puzzling problems encountered in real estate calculations. Frequently it is found that a freehold estate has been encumbered with a ninety-nine year lease, with, possibly, the right of reversion to the owner. It then becomes necssary, especially under inheritance tax laws and also for the purposes of securing credit or issuance of bonds, or for the purpose of calculating national inheritance and income taxes to appraise the fee subject to the lease or the lease subject to the reversion. The capital of corporations frequently represents little more than a lessee's interest in such estate.

Leasehold estates are becoming more and more in vogue in the large cities of the United States, following the very common tenure in Great Britain, Australia, New Zealand and other countries. While this tenure system as now practiced, started in the United States within comparatively recent years, it has been developing with an accelerating pace since the adoption of the federal income tax law which involves a tax on increments and on sales of capital assets. With land values steadily rising in growing cities, with income tax rates running as high as 70 per cent on the increment in case of sale, it was perfectly natural to expect that fee-owners would rather lease than sell their property.

While the popularity of this leasehold tenure is thus attributable in part to the present form of the income tax laws, many owners, operators, merchants and manufacturers, not having sufficient capital both to purchase the land and to develop it, have found it of great commercial advantage and assistance in the development of their business to secure the use, by means of long-term lease, of a valuable parcel of land without any investment in the land, thus allowing the employment of their available capital for improvements only. In point of fact, the arrangement is tantamount to a partnership between the land owner and the lessee.

In a number of cities, as in Cleveland, on the main thoroughfares, few outright sales have taken place during the last ten years. An assessor determining the general property tax, as well as the appraiser for investment purposes, is compelled to obtain his evidence of capital value through a capitalization of land rentals under long time leases. More and more the inheritance tax appraiser is called upon to appraise the interest of lessor, lessee, sub-lessee, fees subject to leases, and the like.

In the appraisal of such estates, there is unfortunately little uniformity of practice. In the hope of securing the very best thought on this subject and dispelling confusion, a questionnaire was sent to the state tax commissions of industrial states, as well as to a number of foreign expert authorities versed in appraisals of this kind. Few helpful and comprehensive answers were received from state tax commissions. A number of excellent answers were received from England, New Zealand and Australia, where long term leaseholds estates have for years constituted the usual form of land tenure. Some of these authorities are herein quoted or referred to. Perhaps the most analytical, logical and most illuminating answer received from an American authority is that of Judge L. L. Hamby, former chairman of the review committee of the estates tax division, Internal Revenue Bureau of the United States.

The main factor in fixing a capital value from given rentals is the determination of a capitalization rate. The capitalization rate must always depend upon the rate at which the given kind and character of securities will sell for in the market at the time in question. One year a 5 per cent rate is eagerly sought, while the next year 6 per cent investments may go begging. This, of course, will vary according to city and time to the degree in which such securities are marketable. On the question of rate, solely, the following table of yield of given bonds both in 1911 and 1924 appears in Volume XLI of Political Science Monthly, Page 273.

## YIELD TO MATURITY OF 16 RAILROAD BONDS

| Railroad | Issues | 1911 | 1924 |
|---|---|---|---|
| Buffalo, Rochester & Pittsburgh | 1st Gen. 5, 1937 | 3.89 | 4.79 |
| Carolina, Clinchfield & Ohio | 1st 5, 1938 | 5.16 | 5.04 |
| Central Railroad of N. J | Gen. 5, 1987 | 3.89 | 4.57 |
| Chesapeake & Ohio | Gen. Mfg. 4½, 1992 | 4.44 | 5.25 |
| **Group 1** | | 4.35 | 4.91 |
| Hocking Valley | 1st Con. 4½, 1999 | 4.36 | 5.23 |
| Lehigh Valley | Gen. con. 4, 2003 | 4.14 | 5.19 |
| Michigan Central | 1st 3½, 1952 | 4.32 | 4.97 |
| Pennsylvania | Con. 4, 1943 | 3.77 | 4.67 |
| **Group 2** | | 4.15 | 5.01 |
| Atchison, Topeka & Santa Fe | Gen. Mtg. 4, 1995 | 4.06 | 4.59 |
| Atlantic Coast Line | 1st Con. 4, 1952 | 4.33 | 4.74 |
| Baltimore & Ohio | 1st Mtg. 4, 1948 | 4.10 | 5.13 |
| Delaware & Hudson | 1st Ref. 4, 1943 | 4.09 | 5.04 |
| **Group 3** | | 4.15 | 4.88 |
| Illinois Central | 1st Gen. 4, 1951 | 3.98 | 4.70 |
| New York Central | 3½, 1997 | 4.10 | 4.80 |
| Norfolk & Western | 1st Con. 4, 1996 | 4.09 | 4.59 |
| Union Pacific | 1st & Ref. 4, 2008 | 4.16 | 4.82 |
| **Group 4** | | 4.08 | 4.73 |
| Average Yield of 16 Railroad Bonds | | 4.18 | 4.88 |

## YIELD OF 16 MUNICIPAL BONDS—1911 AND 1924

| City | Issue 1911 | Issue 1924 | 1911 | 1924 |
|---|---|---|---|---|
| Augusta, Ga. | 4, 1934 | Flood 4½, 1942 | 4.31 | 4.30 |
| Baltimore, Md. | Park 4, 1955 | do | 3.94 | 4.19 |
| Buffalo, N. Y | 4, 1960 | 4½, 1944 | 4.02 | 3.95 |
| Camden, N. J | Dock 3½, 1930 | School 4½, 1943 | 4.11 | 4.16 |
| **Group 1** | | | 4.09 | 4.15 |
| Cleveland, O. | Park 4, 1929 | Water 5, 1936-68 | 3.93 | 4.32 |
| Danbury, Conn. | 3½, 1941 | Water 4, 1946 | 4.22 | 4.21 |
| Des Moines, Ia. | City Hall 4, 1914-26 | Water 4½, 1932-42 | 4.09 | 4.18 |

| | | | | |
|---|---|---|---|---|
| Detroit, Mich. | Park 3½, 1930 | Pub. Lib. 4½, 1948 | 3.78 | 4.28 |
| **Group 2** | | | 4.00 | 4.25 |
| Kansas City, Kan. | Water 4½, 1939 | Water 4¾, 1944 | 4.25 | 4.35 |
| Louisville, Ky. | Sewer 4, 1947 | do | 3.98 | 4.09 |
| Lynn, Mass. | 3½, 1932 | do | 4.28 | 4.28 |
| Minneapolis, Minn. | School 4, 1935 | School 4¼, 1941 | 4.06 | 4.17 |
| **Group 3** | | | 4.14 | 4.22 |
| Newark, N. J. | Ref. 4, 1923 | 4½, 1944 | 3.95 | 4.13 |
| Philadelphia, Pa. | 3½, 1934 | 3½, 1934 | 3.88 | 4.13 |
| Rochester, N. Y. | 4, 1922-27 | Mun. 4½, 1945 | 4.03 | 3.95 |
| St. Louis, Mo. | Pub. Imp. 4, 1928 | Bldg. 4½, 1935 | 3.92 | 4.16 |
| **Group 4** | | | 3.94 | 4.09 |
| Average Yield of 16 Municipal Bonds | | | 4.04 | 4.18 |

It appears that the average yield in 1911 of all railroad bonds shown was 4.18 per cent, while in 1924 it was 4.88 per cent. For municipal bonds it was 4.04 per cent in 1911 and 4.18 per cent for 1924. This variation of railroad and municipal bond yield is undoubtedly partly due to the exemption of municipals from income tax. The 4.18 per cent figure shown in 1924 should therefore not be used, inasmuch as incomes from leaseholds is taxable under the federal law.

Another bit of evidence of the value of money is the average interest rate on time loans in the city of New York as follows:

## INTEREST RATES

| Year | % | Year | % | Year | % |
|---|---|---|---|---|---|
| 1925 | 3.93 | 1918 | 5.87 | 1911 | 3.11 |
| 1924 | 3.58 | 1917 | 4.52 | 1910 | 3.95 |
| 1923 | 5.09 | 1916 | 3.15 | 1909 | 3.17 |
| 1922 | 4.55 | 1915 | 2.71 | 1908 | 3.11 |
| 1921 | 6.14 | 1914 | 4.17 | 1907 | 6.37 |
| 1920 | 8.04 | 1913 | 4.50 | 1906 | 5.72 |
| 1919 | 5.85 | 1912 | 4.07 | | |

The New South Wales Valuation Act as enacted by the New South Wales legislation definitely fixes the method to be employed in that locality for the appraisal of improved and unimproved properties which is of considerable interest in standardizing appraisals in this country. The act provides as follows:

"Where there are more owners than one of any land, the sum of the improved values, unimproved values, and assessed annual values respectively of the estates and interests of all the owners shall be not less than the amounts at which the improved value, unimproved value and assessed annual value respectively of such land would be estimated if held by one owner in fee-simple."

"The value of the interest of a lessor, who is not also a lessee, in the improved value of land is that value less the interest of his lessee, and of any sub-lessee."

"The value of the interest of a lessee in the improved value of land is the present value of the excess, if any, of five per cent per annum upon such improved value over the rent, rates and taxes payable by the tenant under his lease for the unexpired term, plus the present value of any right to compensation or of purchase or other valuable consideration to which he is entitled under the lease, and minus the detrimental value of any restrictions as to the use to which the leased land may be put, and minus the value of any unfulfilled onerous conditions to which the lessee is liable under the lease, and minus the value of the interest (if any) of a sub-lessee holding under or through him."

"All computations of present values of the interests of lessors and lessees shall be made on a five per centum per annum compound interest basis with annual rents."

"Where any lease contains a provision for re-appraisement of the rent at the expiration of a certain period, the value of the interests of the lessors and lessees shall be calculated as if the lease terminated at the expiration of the said period; on any such re-appraisement being made, the value of the said interests shall be calculated as in the case of a new lease commencing at the date of re-appraisement and at the rent as so re-appraised."

The theory and method of capitalization and its effect is more fully discussed elsewhere. Suffice it to say that for the purposes of the discussion of this branch of real estate appraisals, 6 per cent will be used in examples.

Many general assumptions have been made, such as "assuming the lease is well secured" or "assuming that no question of adequacy or inadequacy of the improvements or unsuitableness thereof to the location," etc. A consideration of the many cases where the general assumptions would not apply would extend the limits of this inquiry unduly. Where the assumptions are not of strict applicability, the assistance of a realtor or the local real estate board's appraisal committee should be sought.

No lease is susceptible of appraisal unless it contains the usual safeguards of the interest of both lessor and of lessee. If, for example, the lease contains an option to buy, such a set figure will, of course, limit its value to the lessor. If a building is to be erected of unusual size and within a short period, this may very seriously affect the lessee's interest, so much indeed as to wipe out what otherwise might be regarded as a valuable asset.

In all the cases herein set forth, for instance, it will be assumed that the lessee's obligation is well secured, that no favorable or unfavorable option exists, that no unusual burdens to either party are involved; that the lessee is to pay all taxes and assessments, that the usual insurance safeguards to each of the parties are provided, that no questions of inadequacy of improvements or unsuitableness thereof to location are involved. It will also be assumed that the property is in the best location, apparently growing in value in a city increasing in population. It will generally be assumed that the land was unimproved or of little commercial value at the time of the execution of the lease. It will be assumed that the lease contains a provision whereby the improvement will be appraised at the end of the term and that lessor will have the option of buying the improvement or in lieu thereof will give the lessee a lease on identical terms or at a rental then to be arbitrated.

With these general and definite assumptions annual future rentals will be figured as 6 per cent annuities. In other words, the present worth at 6 per cent of an accumulating dollar for a given number of years multiplied by the annual rental gives the full present worth value of the usual lease for a short and definite time. To this must be added the value of the reversion to arrive at the lessor's estate.

The value of the reversion is likewise figured. It is the difference between a full capitalization at 6 per cent of the probable annual rental and the value of the particular estate as above figured. In arriving at these figures, the following well-known statistical works will be of great assistance: Robinsonian Building-Loan Interest Tables, published by E. K. Burden, successor to J. Watts Robinson of Brookline, Mass., and Wolfe's Inheritance Tax Calculations, published by Baker, Voorhis & Co., New York. Present worth tables, both of the cumulative annual annuity and also of a definite and fixed payment in the future, sufficient for the purposes herein are added in the appendix.

## NINETY-NINE YEAR RENEWABLE, FLAT RENTAL

### Valuation of Lessor's Estate

> **Hypothesis 1 (a).** Assuming that the lease is for a period of 99 years, commencing today, with an option for 99 years under the same conditions; assuming the lessee has improved the premises by the erection of a $200,000 building; assuming that the lessee's net profits, after making all due allowances for rent, depreciation, maintenance, repairs, interest on investment, etc., seem to amount to $2000 per annum; assuming that the lease calls for an annual rental of $6000.

QUESTION:

"What is the lessor's estate worth today?"

ANSWER:

$6000 capitalized at 6 per cent equals $100,000—Value of lessor's interest.

The author has uniformly employed a 6 per cent capitalization rate in appraising the value of the lessor's interest in the premises, the market value of money for investments in real estate having been for a number of years approximately 6 per cent in the United States.

Judge L. L. Hamby, formerly chairman of the review committee of the estates tax division, Internal Revenue Bureau of the United States, also employs a 6 per cent rate and values this interest at $100,000.

Harry E. Gilbert, special assessor of the appeal tax court of the city of Baltimore, Maryland, municipal department, and Zanas W. Bliss, chairman of the board of tax commissioners of the State of Rhode Island and Providence Plantations, believe 6 per cent to be a proper rate.

However, a leading London, England, authority uses a flat 5 per cent rate if the land is vacant, thereby placing a value of $120,000 on this interest. If it be improved land such as this question indicates, he advises a 4 per cent rate or a value of $150,000.

The lower rate of 5 per cent advised by the London authority is probably due to the fact that the rate of interest in the hitherto money center of the world has for so many years been lower than in the United States, just as the rate of money is lower in New York and Chicago than in smaller cities. It is incomprehensible, however, why an "improved" property should be capitalized at 4 per cent, a lower rate than he suggests for capitalizing vacant land values. It is quite common for building operators to insist on a higher return on buildings than is demanded by land owners for very many practical business reasons.

F. W. Flanagan, valuer-general of the Dominion of New Zealand, believes a flat rate of 5 per cent should be used, making this interest worth $120,000. His use of a 5 per cent capitalization rate may be due to the fact that the land valuation act of New Zealand assumes the fair annual rental of any property for the purpose of computing interest in leased land to be 5 per cent of the value of the fee simple.

Hon. A. F. Smith, federal commissioner of taxation of the Commonwealth of Australia, takes the present value of the rentals for 99 years, ascertained on a 4½ per cent interest table, and adds thereto the reversionary value at expiration of term. Assuming the rate to be 6 per cent, he would arrive at the value of the lessor's estate thus: The present value of $1.00 accumulating for 99 years compounded at 6 per cent (instead of 4½ per cent) is today worth $16.614694. Therefore an income of $6000 per annum for 99 years is worth today 6000 × 16.614694 equals $99,688.164.

The value of the reversionary interest may be arrived at by deducting the aforesaid present value of the 99-year rentals, namely, $99,688.164 from a capitalization of a permanent annuity or rental of $6000 at 6 per cent, namely, $100,000, equals $312.83. It will be noted that the value of the lessor's estate by this process produces the same amount as a simple capitalization of an annual income of $6000 in perpetuity. This is because the lease is for 99 years, renewable for 99 years, making it practically of the same value as a fee. The importance of the reversionary method becomes more apparent when the lease has but a short time to run or when a short lease is to be calculated. In such cases the value of the fee subject to the leasehold becomes increasingly the reversionary estate value, although the gross value remains the same. As before stated, the 4½ per cent rate is a question of market rate of money.

## NINETY-NINE YEAR RENEWABLE, FLAT RENTAL

### Value of Lessee's Estate

> **Hypothesis 1 (b).** Assuming the conditions in Question 1 (a) to be the same here, namely, assuming that the lease is for a period of 99 years, commencing today with an option for 99 years under the same conditions; assuming the lessee has improved the premises by the erection of a $200,000 building; assuming that the lessee's net profits, after making all due allowances for rent, depreciation, maintenance, repairs, interest on investment, etc., seem to amount to $2000 per annum; and assuming that the lease calls for an annual rental of $6000.

QUESTION:

"What is the lessee's estate worth?"

ANSWER:

For a number of years, the author has been arriving at the lessee's interest under 99-year leases by capitalizing the net profits, namely, $2000 at a 6 per cent rate, giving a value of $33,333. This sum added to his investment of $200,000 for the building would give him an estate worth $233,333.

In New Zealand, the lessee's interest would be computed by taking the value of an annuity of $2000 per annum for 99 years and adding thereto the value of the building. The value of $2000 annuity (at 6 per cent) is $1.00 × 16.614694 by $2000 equals $33,229, the value of the leasehold. To this should be added the lessee's building investment, $200,000, making a total value of $233,229. The value of a period after 99 years is disregarded because of its remoteness.

Judge Hamby, as well as other United States authorities consulted, have employed the former method.

It will be noted that a capitalization of land value at 6 per cent equals $33,333, while an annuity at 6 per cent for 99 years amounts to $33,229. The difference, namely, $104, is the value between a lease for 99 years only and a 99-year lease with an option for a further 99 years. The value of the longer lease, as related to the value of the building, is not herein considered, as it is assumed that the lessee has agreed to pay the then value of the building. It is also believed that the assumption in the hypothesis that proper depreciation if annually provided for will take care of his building investment.

## NINETY-NINE YEARS ONLY, FLAT RENTAL

### Valuation of Lessor's Estate

**Hypothesis 2 (a).** Assuming that the lease is for 99 years only, that it calls for a rental of $6000, that it was executed Jan. 1, 1910, that the improvements upon said premises when the lease was executed were and still are of little value; assuming that the land value as shown by neighboring sales is $150,000.

QUESTION:

"What is the lessor's estate worth?"

ANSWER:

Here the only possible profit to the lessor for a period of 86 years will be $6000 per annum. While the long leasehold tenure system is of comparatively recent growth, it has been the practice in Cleveland to capitalize the rental, that is, $6000 at 6 per cent, which equals $100,000.

Judge Hamby, and Mr. Gilbert of Maryland, agree that the lessor's interest should be computed at a capitalized 6 per cent rate. $6000 @ 6 per cent equals $100,000, the value of lessor's interest.

Mr. Flanagan of New Zealand, using a 5 per cent interest table, and Mr. A. F. Smith of Australia, using a 4½ per cent interest table, compute this interest by finding the value of an annuity for 86 years and adding thereto the reversionary value of the land.

This latter method is to be preferred. The method of computing the value on an annuity basis is more exact. It, together with a calculation of the reversionary interest, is a formula which can be used at any time during the life of the lease, that is, the first ten years or the last ten years, without doing any injustice. As the leasehold term is shortened year by year the capitalization method becomes less and less justified since it becomes more and more inaccurate. Capitalization may be employed only where the profit may be regarded as permanent. The annuity of $6000 for 86 years is worth $1.00 × 16.555328 × 6000 equals $99,331 and the reversionary estate $669; total $100,000, thus indicating a difference of but $669 under this method as compared with a simple capitalization of the future rentals. In view of the fact that the present land value is $150,000 or $50,000 greater than originally, we must add the value of $50,000 which at .006663, the single payment present worth factor, makes $333.15.

## NINETY-NINE YEARS ONLY, FLAT RENTAL

### Valuation of Lessee's Estate

**Hypothesis 2 (b).** Assuming the conditions in Question 2 (a) to be the same here, namely, assuming that the lease is for 99 years only, that it calls for a rental of $6000, that it was executed Jan. 1, 1910, that the improvements upon said premises when the lease was executed were and still are of little value; assuming that the land value today as shown by neighboring sales is $150,000.

QUESTION:

"What is the lessee's estate worth?"

ANSWER:

The lessee in this case has the use of property worth $150,000 for 86 years. It is probable, therefore, that the net land rentals on a 6 per cent basis of $150,000 would be $9000 per annum, a net profit of $3000 per year for the lessee for the unexpired term. As the lease is merely for a period of years and reverts to the lessor on its expiration, the lessee can have no greater interest or profit than for the unexpired time, of 86 years. The lessee's interest should be computed on an annuity basis. One dollar for 86 years is today worth $16.555328 computed at 6 per cent, $3000 × 16.555328 equals $49,666, as compared with the capitalization method figure of $50,000 arrived at by capitalizing at 6 per cent the annual net profit of $3000. Again the difference between the straight capitalization method even for a period ten years less than 99 years amounts to an insignificant sum, namely, $334 more than the more exact and scientific annuity method.

Messrs. Hamby, Flanagan and A. F. Smith concur in this latter method of calculation, varying only in the interest table used. Judge Hamby uses a 6 per cent rate, Flanagan of New Zealand a 5 per cent rate and Smith of Australia a 4½ per cent rate.

## NINETY-NINE YEAR LEASE, RENEWABLE, GRADUATED RENTAL

### Valuation of Lessor's Estate

**Hypothesis 3 (a).** Assuming that the lease is for a period of 99 years, commencing today with an option for 99 years under the same conditions; assuming the lessee has improved the premises by the erection of a $200,000 building; assuming that the lessee's net profits, after making all due allowances for rent, depreciation, maintenance, repairs, interest on investment, etc., seem to amount to $2000 per annum; assuming that the lease calls for an annual rental of $6000 for ten years and $12,000 per annum for the remainder of the term.

QUESTION:

"What is the value of the lessor's estate and how do you arrive at it?"

ANSWER:

Mr. Flanagan of New Zealand values this interest on the basis of an annuity using the 5 per cent interest tables. Calculating the value on a 6 per cent basis he would proceed as follows: Lessor receives $6000 per annum for ten years the present value of which is 6000 × 7.36 equals $44,160; plus the present value of $12,000 per annum for 89 years commencing ten years hence which is 12,000 × 9.254 (16.614-7.36) equals $111,048. Lessor is also entitled to receive either possession or rent after the 99 years have expired, the reversionary value in which can be taken at $12,000 × 16.667 less 16.614 or .053 equals $636. Thus $111,048 plus $44,160 equals $155,844, the value of lessor's interest.

The aforesaid method is quite generally followed by the best authorities.

In Australia, the same system is used, save that the 4½ per cent interest table is used.

Judge Hamby capitalizes the rental of $12,000 and subtracts the present value of $6000 as an annuity for ten years computed at the same rate of discount used in the capitalization. Twelve thousand dollars capitalized at 6 per cent equals $200,000; minus the present value of $6000 for 10 years (6000 × 7.36009 equals $44,160), equals $155,840, the value of lessor's interest. The same result will be obtained by capitalizing $6000 at 6 per cent in perpetuity, namely, $100,000. Then add the present worth of an annuity of an additional rental of $6000 in perpetuity, commencing 10 years hence. Formula: $1.00 × 9.307 (16,667 perpetuity present worth factor less 7360 present worth annuity factor for 10 years) × $6000 equals $55,842, which added to the $100,000 above gives a total value of $155,842.

An interesting question arises when the option price and market rate of money are such that one may not assume a continuation in the payment of the rentals after a capitalization of the rental at the present market rate of money appears to be more than the option price. For example, let us assume that A. B., owner in fee simple of a parcel of real estate situated in the heart of the business section in a city of 400,000 population, entered into a lease agreement on Dec. 15, 1926, with the X. Y. Z. Publishing Company, a corporation engaged in a daily newspaper enterprise, for a term of 99 years, not renewable.

1. The lease calls for a rental of $6000 per annum for the first five years; $7500 per annum for the next five years; $9000 per annum for the third five-year period; and $12,000 per annum for the balance of the term.

2. The lessee has an option to purchase the fee at any time between the eleventh and fifteenth years at an agreed price of $150,000; in the event of failure to exercise said option, the rental increase to $12,000 per annum as above indicated, for the balance of the term, at the expiration of which the lessor agrees to pay the value of the improvements then existing.

3. The lessee is incorporated for $100,000 capital stock, fully issued and outstanding; has had a very prosperous existence of some twenty years, a record of 15 per cent dividends for the last twelve years, and an accumulated surplus of $165,000.

4. Lessee immediately erects a building on the premises costing $250,000, for which it has issued bonds in the sum of $175,000, interest at 7 per cent per annum, payable semi-annually, due Jan. 1, 1942, dated Jan. 1, 1927; bond charges amounted to $10,000; the lessee providing $75,000 cash on building, as well as the $10,000 for bond charges.

5. The building as completed and fully rented provides an income of $42,500 per annum; taxes charged $4820; depreciation and maintenance $7500; light, heating, and other incidentals charged to operation of business; amortization of bonds $8403.50 per annum; interest charges $12,250 per annum; net profit $526.50 per annum.

### WHAT IS THE VALUE OF LESSOR'S INTEREST AS OF JAN. 1, 1927, IT BEING ASSUMED THAT THIS DATE IS THE BEGINNING DATE OF THE LEASE, AND THAT THE LESSOR DIES DEC. 31, 1926?

It is quite patent that a solvent, prosperous and wealthy lessee, in the circumstances above indicated, assuming that the money rate of interest remains at 6 per cent, will exercise the option right granted, and avoid the payment of the highest rental, viz., $12,000 per annum; so that the lessor's interest would be arrived at by taking the present worth of the rentals for the first fifteen years and add thereto the present worth of the option price of $150,000 due fifteen years hence.

| | |
|---|---|
| First 5 Years—$6,000 x 4.21236 (Present Worth Factor) | $ 25,273.96 |
| Second 5 Years—$7,500 x 3.14774 (Present Worth Factor) | 23,607.98 |
| Third 5 Years—$9,000 x 2.35216 (Present Worth Factor) | 20,269.44 |
| Option Price—$150,000 x 0.417265 (Present Worth Factor) | 62,589.75 |
| Total Appraised Value Lessor's Interest | $131,741.13 |

The above illustrates the advisability of investigating lessee's solvency to determine security, and proper rate of capitalization.

## NINETY-NINE YEAR LEASE, RENEWABLE, GRADUATED RENTAL

### Valuation of Lessee's Estate

**Hypothesis 3 (b).** Assuming the conditions of hypothesis 3 (a) to be the same here, namely: Assuming that the lease is for a period of 99 years, commencing today, with an option for 99 years under the same conditions, assuming the lessee has improved the premises by the erection of a $200,000 building; assuming that the lessee's net profits, after making all due allowance for rent, depreciation, maintenance, repairs, interest on building investment, etc., seem to amount to $2000 per annum; assuming that the lease calls for an annual rental of $6000 for ten years and $12,000 per annum for the balance of the term.

QUESTION:

"What is the value of the lessee's interest and how do you arrive at it?"

ANSWER:

Here we have a lessee who has erected a building costing $200,000. His rental obligation is $6000 for 10 years, then $12,000 for 89 years. He is realizing a net profit of $2000 at present which may—rather must, be considered to continue for the term of 10 years. Because of his increased rental burden in 10 years, it would seem then that the tenant presumably will profit $2000 annually while his rental burden is $6000, but he will lose $4000 per annum during the next 89 years. In other words, without figuring the present value of the annuity of $2000 and then offsetting this with a probable loss of $4000 per annum, it is evident that a net loss will be the result. Hence, so far as land value is concerned, the lease is apparently a burden and not an asset. It is, of course, possible that the location and the rents may improve, but they may also for one reason or another diminish. The appraiser cannot rationally assume anything but the status quo. If existing rentals in the neighborhood would justify a presumption of an increased return in the immediate future, such changes of fact or assumption would justify a change of valuation. The net loss of $4000 per annum for 89 years is arrived at after deducting all operating expenses, which include interest on the building investment. Assuming that only 6 per cent has been charged in the calculations would mean that the original lessee is receiving $12,000 annual income from the building. Deducting the annual land income loss of $4000 from this $12,000 gain would leave $8000 for capitalization or $133,000 capital value to which we must add the $2000 annual profit for the first 10 years, the present worth of which is $14,720.

If the building is mortgaged, as is frequently the case, the amount of the mortgage would be deducted from the present worth above found.

Authorities are well agreed that the lessee's interest should be assessed at nil unless the land and building values indicate that lessee could sublet at a profit.

## NINETY-NINE YEAR LEASE NOT RENEWABLE—SANDWICH LEASE

### Valuation of Lessor's (Original Lessee) Estate

**Hypothesis 4 (a).** The property is leased for $6000 per year flat for 99 years not renewable, subsequently it is sublet at $8000 per year; subsequently it is sublet for $10,000.

QUESTION:

What is the value of the original lessee's estate?

ANSWER:

The sub-lease given by the original lessee is generally denominated a sandwich lease, since it lies between a prior and a later lease. Here the original lessee is assumed to have placed all the obligations assumed by him in the original lease upon the subsequent tenant, resulting in a net yearly profit of $2000, which is the difference between the $8000 which he pays and the $10,000 which he receives. This should be figured as an annuity for 99 years as in other cases.

Some appraisers capitalize the $2000 at 7 per cent, making $28,570. But it is argued since the lease is not renewable, an amortization fund must be deducted from the $28,570. "This fund will be a sum which, with compound interest at 3 or 3½ per cent, will amortize the value of this leasehold interest during the remainder of the lease."

Assuming the interests of the original lessee are well secured in his subsequent lease, the use of a 7 per cent capitalization rate here is hardly justified. No more so than in many cases herein set forth of appraisal of lessee's interest. However, if the capitalization method is resorted to with another calculation to produce an amortization fund to wipe out the difference between the capitalization values, one based on income and the other based on 99 years, then the original rate of capitalization (7 per cent) should also be used to secure the amortization sum; otherwise it under-appraises the estate. For example, at 3 per cent for 99 years, a present sum of $1531 will produce $28,570 in 99 years. Deducting $1531 from $28,570 makes $27,039, the 7 per cent amortized lease value. At 7 per cent in 99 years it would require but $35 to produce the same amount, which deducted from $28,570 would produce a net appraisal of $28,535, or $1496 more than by amortizing at 3 per cent.

The simplest way to appraise this estate at 7 per cent (should be 6 per cent under assumption) would be to take the present worth of $2000 as an annuity for 99 years. The formula would be $1.00 × 14.268 × $2000 or $28,536 equals the value of a 99 year annuity. When, however, the annuity is capitalized in perpetuity, the estate becomes slightly over-valued. It should be reduced not by an amortization fund, but by the difference between such capitalization as an estate in perpetuity, namely, $28,570 and the present value of the annuity for 99 years, namely, $28,536, making a reduction of only $34 instead of $1531 at 3 per cent.

The creation of an amortization fund is no more justifiable in such a case than in taking the present worth of a promise to pay by mortgage or promissory note or annuity. The theory of an amortization fund, it must be remembered, is to lay by a certain sum which with interest will in a certain number of years recoup the investment. In the case at hand, a purely speculative investment was made, the profit from which is dependent on the present and prospective rentals. The immediate question to the appraiser is not how shall the investor get back his original investment, which he may or may not recover. The sole question for him to determine is with certain annual profits sure to ensue for a certain period of time hereafter, what is the present worth thereof at the present time at a market rate of money controlling such investments in the particular field of inquiry.

## NINETY-NINE YEAR LEASE NOT RENEWABLE—SANDWICH LEASE

### Valuation of Sub-Lessee's Estate

**Hypothesis 4 (b).** The property is leased for $6000 per year flat for 99 years not renewable; subsequently it is sublet at $8000 per year; subsequently it is sublet for $10,000.

QUESTION:

What is the value of the second sub-lessee's estate?

ANSWER:

This will be figured as a lessee's lease is generally figured under a flat rental as in *2* (b). Here the sub-lessee pays $8000 and gets $10,000 annually. He is assumed to have the obligation well secured. Hence there is no impropriety in calculating his estate as an annuity for 99 years. The formula is $1.00 × 16.6146 × $2000 equals $33,229.

It is said that the rents being "prospective" should be capitalized more liberally. But all rents under all leases, as well as all bonds, mortgages and notes are prospective. This, then, offers no exception to any other case herein considered. It is possible that lessee has committed himself to certain continuing, perhaps contingent, obligations which might involve a continuing liability and involve a necessary reduction of value. The assumption, however, is that the sub-lessee is well secured. If the assumption be not valid, another situation would arise.

## TWENTY-YEAR LEASE, NOT RENEWABLE

### Valuation of Lessor's Estate

> **Hypothesis 5 (a).** Assume rental is $5000 for 20 years, lessee to pay taxes and improve. Land is worth $100,000.

The present worth of the annual annuity must be taken. Formula: $1.00 × 11.47 × $5000 equals $57,350. Value of the reversion is the present value of $100,000 receivable in 20 years. Money being worth 6 per cent, the land being assumed to be worth $100,000 now as well as 20 years hereafter, it will be necessary to find the present worth of $100,000 receivable in 20 years. Formula: $1.00 × .311805 × $100,000 equals $31,180 the value of the reversion, which added to $57,350 makes a value of $88,530.

Usually in a lease of such short duration, some building provision beclouds the calculation. The lessee usually protects himself by imposing upon lessor the obligation to buy the improvement at its then arbitrated value, which frequently is a serious burden.

## TWENTY-YEAR LEASE, NOT RENEWABLE

### Valuation of Lessee's Estate

**Hypothesis 5(b).** Assume rental is $5000 per year for 20 years, lessee to pay taxes and improve. Land is worth $100,000.

Here not sufficient data is available to discover the actual profit being made by lessee in this venture. It is stated, however, that the land value is $100,000, with a market rate of money at 6 per cent. In other words, his lease is worth $1000 ($6000 less $5000) per year for 20 years. Formula: $1.00 × 11.470 × $1000 equals $11,470. The assumed facts show no other present or prospective value. If the lessee erected an improvement, which the lessor is to pay for, the present worth of a reduplication value, less 20 years' depreciation, should be added. In other words, if the lessee has a building with a reduplication value of $100,000, if this building will depreciate 2 per cent per year for 20 years, the lessee may figure that lessor must pay him $60,000 in 20 years. The present worth of $60,000 in 20 years is $18,708. Formula: $60,000 × $1.00 × factor .311805. On the other hand, if the lessee has a building on the premises worth $100,000, which lessor is not to pay for and which will be worth $60,000 in 20 years by reason of structural depreciation, it is evident that the lessee will suffer a loss of $60,000 at that time which amounts to a present worth loss on the building as above set forth. This amount should be charged against the land rental profit. The net loss then might be computed in the aggregate or spread over the entire period of 20 years on an average or graduated basis as desired.

## NINETY-NINE YEAR RE-APPRAISAL LEASE RENEWABLE

### Lessor's Estate

**Hypothesis 6 (a).** Assuming that the lease is for a period of 99 years, commencing today, with an option for 99 years under the same conditions; assuming the lessee has improved the premises by the erection of a $200,000 building; assuming that the lessee's net profits, after making all due allowances for rent, depreciation, maintenance, repairs, interest on investment, etc., amount to $2000 per annum, assuming that the lease calls for an annual rental of $6000 for the first twenty years and thereafter a rental to be computed on a basis of 4 per cent on the then existing capital value of the land only, irrespective of its improvement, provided, however, that in no event shall the rental be less than $6000 per annum for the remaining period of time.

QUESTION:

"What is the value of the lessor's estate?"

ANSWER:

It is evident from the foregoing that the lessor has an assured income of $6000 per annum for 20 years, but that thereafter the income is entirely uncertain and problematical. The only value therefore, that this lease has to the lessor is the present worth of an annuity for 99 years of $6000 per annum plus the value of the reversion. The value of the annuity is $6000 × 16.614 equals $99,684. The value of the reversion after 99 years is $6000 × 16.667 less 16.614 or 0.053 which makes $318 or a total of $100,002 representing the lessor's interest.

If the land value at the time of calculation has increased over this amount, say $150,000 additionally, it is quite evident that such conditions would increase the probable value of this estate. In such case the present worth of $6000 (4 per cent on $150,000 reappraisal additional value) an annuity will have to be added. If the lease still has 10 years to run of the initial term the calculation would be $6000 × 16.667-7.360 equals 9,307 equals $55,842. This should be added to the above $100,002.

## NINETY-NINE YEAR RE-APPRAISAL LEASE—RENEWABLE

### Lessee's Estate

**Hypothesis 6 (b).** Assuming that the lease is for a period of 99 years, commencing today, with an option for 99 years under the same conditions; assuming the lessee has improved the premises by the erection of a $200,000 building; assuming that the lessee's net profits, after making all due allowances for rent, depreciation, maintenance, repairs, interest on building investment, etc. seem to amount to $2000 per annum, assuming that the lease calls for an annual rental of $6000 for the first twenty years and thereafter a rental to be computed on a basis of 4 per cent on the then existing capital value of the land only, irrespective of its improvement, provided, however, that in no event shall the rental be less than $6000 per annum for the remaining period of time.

QUESTION:

"What is the value of the lessee's estate?"

ANSWER:

Here, according to present indications, the lessee will enjoy a $2000 income for 20 years. The present worth of $2000 annually is 41.00 × 11.47 × $2000 equals $22,940. If the rentals under existing sub-leases involve certain definite future additions after the 20-year period, or if sub-leases at the time of calculation could be made at enhanced rentals, should such factor be considered, thus increasing the value of the lessee's estate? The answer must be in the negative. While it may be assumed that the lessee will increase his rentals after 20 years, the uncertainty as to the amount of rent the lessee will be compelled to pay under the re-appraisal precludes any possibility of calculation.

It will be necessary to take the present worth of such enhancements only as existing contracts call for, which should be calculated to the end of the 20-year period. To this should be added the cost of re-duplication of lessee's improvements, less structural and obsolescence depreciation. To this should be added any value due to a favorable re-appraisal rate. If the market rate of money at the time of the appraisal is higher than the agreed rate as fixed in the lease, manifestly the lessee has an estate of additional value. If the property at the time of appraisal is worth $500,000, if the market rate of money for such investment is 6 per cent, if the re-appraisal period is to arrive in 20 years and continue for 79 years, the lessee would enjoy an annual profit of 2 per cent on $500,000, namely $10,000 over any leasehold which could be effected in the market at the present time. As this profit would not arrive for 20 years, its present worth would be figured $10,000 × 5.197 (16.667 less 11.470) equals $51,970, which sum added to $22,940, plus the value of the $200,000 building would represent the value of the lessee's estate.

It is a matter of common knowledge that the tenant profits in addition to the foregoing. It is said, for instance, that arbitration values under re-appraisal leases always favor the lessee. Frequently during re-appraisal periods, rents rise thus giving the lessee an additional profit. This is undoubtedly true of property in a growing city and neighborhood, where leases are generally affected on a 5 or 10 year basis. This profit is, however, too remote and uncertain to be calculated. In the calculation of future rentals, the present rentals must be assumed to continue, neither rise nor fall, unless a more advantageous rental might now be secured or unless a contract is already effected, which will in the future result in such increased rental.

Re-appraisal leases, provided for no minimum rental, are difficult to appraise whether it be from the standpoint of the lessor or the lessee when the time for re-appraisal is at hand. In the foregoing we have appraised leases to the lessor and the lessee which have a period to run within the re-appraisal term. But how about appraising the lessor's estate under a re-appraisal lease by arbitrators who are called upon to appraise the market value of the premises unimproved? In the Arbitration of the Valuation of Tracy-May premises, 1706 Euclid Avenue, Cleveland, it was argued by the lessee that other sales in the vicinity were no criterion, urging that:

> "The owner voluntarily and permanently, in order to secure all possible future profit, removed his site from the realm of speculation. In effect, the owners of the fee have said they will not sacrifice or part with future possibilities for an enlarged present return. They will not bargain away the future—that profit or loss they reserve to themselves. There are therefore no speculative or prospective or potential rents to appraise. Nothing is left to inquire into but its present use value.
>
> "The terms of the arbitration provide for an appraisal of the 'market value of said premises.' The market value, or rather value of premises (there being no market) under a re-appraisal lease and the value of an un-

> encumbered fee with its great future possibilities are two different matters. Premises subject to a re-appraisal lease will not sell to advantage either in the hands of the lessees or the lessors. Indeed, a sale or mortgage by a lessee of his interest in improved premises subject to a re-appraisal lease is exceedingly difficult, almost impossible. If it sells at all, it is because the use value is greater than the appraised value, leaving a residue for capitalization for ten years. Not a single insurance company will today loan on a re-appraisal lease. This, of course, depresses its value. Purchasers are wary of decennial appraisals for still a greater reason. They magnify the danger of absurd or ill-advised or confiscatory arbitrations—little knowing that re-appraisals in the past have always favored the energy of the operator of property rather than the unearned income of the landlord."

It was also urged in that case, that the market value of premises subject to a re-appraisal lease of necessity must be less because of the existence of the lease upon particular premises.

> "Premises leased on a re-appraisal basis are also at a disadvantage to the landlord. Such premises under a re-appraisal lease, if offered for sale, would not sell at all, excepting only in cases providing for a minimum rental. In such case, the premises would be worth a capitalization of such minimum. Where no minimum is provided, the premises will not sell as will unencumbered land. The reservation of a minmium alone will give it value. The premises have no prospective value as have other lands. Such a lease is therefore an encumbrance both to the lessor and lessee. The purchaser demands an allowance by way of insurance against uncertain, erratic or emotional appraisals. Whatever sum you gentlemen may agree upon, the minimum valuation stipulated in the lease will probably cause a loss to the lessee. In this respect, lessees made a bad bargain. On the other hand, from the landlord's standpoint, it will confine the value of the premises to such income. And buyers of the fee would pay probably no more for these premises than a capitalized value of the rental you fix.
>
> "The market value or rather the value of these premises (there being no market value) is confined, circumscribed and limited by reason of this re-appraisal lease, the same as though the soil were solid rock, or were quick sand or situated near a nuisance. The value even of adjacent premises of like size with the same

identical building, with the same income and expense would not be identical. The premises are similar to restricted premises—restrictions against building for one purpose or another, as so far from the street, such a kind of building or an easement over part of this land for egress and ingress to other lands, or a reservation of space for light and air in favor of adjacent lands. These all affect the value of the premises the same as a re-appraisal lease. It is indeed lucky for the lessors that their financial condition does not require their mortgaging or selling these premises. They would have discovered why re-appraisal leases have become so unpopular—burdensome both to the lessee and the lessor. The speculation is gone, the value is eliminated except as to its usufruct. This explains why many re-appraisal leases are later converted into flat term leases, to the advantage of both lessor and lessee. It permits both to deal in 'futures.'

"To treat this subject from another angle.—The value of improved premises is either what you can sell it for or what it will produce in revenue. Has anyone ever heard of a sale of the fee of re-appraisal premises containing no minimum? Even so there can be no market or average sale if one may be discovered now and then in different sections of the city. We are, therefore, of necessity, confined to the earning capacity of the premises.

"It is therefore necessary that you appraise these premises, not as other premises, unencumbered and speculative, having a discountable future, or having a definite, ascertainable rental, capitalizable to an approximate value. These premises are subject to a re-appraisal lease which is calculated to give the landlord the increment from time to time if such there be and in such amount as human appraisers may decide from time to time. By the act of the Tracy estate, control is divested from them. A partnership is formed with the lessee and the profits are divisible, to the lessee, giving him the current interest on his investment and cost of management, to the owner the difference. Any other construction of re-appraisal leases would result in confiscation of the lessee's investment, his labor, his risk, his energy, his service. Appraisers of re-appraisal leases generally repudiate such a confiscatory construction. It is undoubtedly for these reasons that real estate asses-

> sors regard it as axiomatic, that re-appraisal leases are not criteria of values and always favor the tenant."

From the foregoing, it seems to have been the contention that sales values of property more or less speculative in nature, especially in rapidly growing districts of rising values should not be considered and that intrinsic or economic values alone should govern, counsel urging, in that case:

> "That the future speculative value should be taken as the basis in a re-appraisal lease is unconscionable and immoral. The very theory and practice of such lease belies such a construction. It would result in the lessor getting a rental on a value that may never materialize, may never exist. It would give such a landlord a rental, excessive now and then again the same rental when the value may actually exist, resulting therefore in a double rental."

If one agrees with the above statement it would follow that an appraisal of the lessor's interest under a re-appraisal lease at the expiration of any intermediate term must be through a capitalization of the stipulated rental.

That this contention, namely, that a lessee's interest under a re-appraisal lease is, generally speaking, of little value except in the particulars aforesaid, is borne out by Section 5330 of the Ohio General Code. Under that section of the code:

> "Whenever lands belonging to the state, a municipal corporation, religious, scientific or benevolent society or institution, whether incorporated or unincorporated, or to trustees for free education only, or held by the state in trust, are held under lease for a term of years renewable forever and not subject to revaluation, such lands shall be considered, for all purposes of taxation, as the property of the lessees and shall be assessed in their names."

This would seem to indicate that the legislature intended to exempt from taxation long-time leases when they were subject to revaluation, an inference that being subject to revaluation, would make them valueless. See also Zumstein v. Coal & Mining Co., 54, O. S. 264.

## CHAPTER 16

# MANUFACTURING AND RAILROAD PROPERTY

Should be appraised by the square foot on its own merit rather than on a basis with adjacent property—Values are fixed by location, accessibility and similar factors—Factory site philosophy—Effect of railroads on values—Street frontages of factory sites most valuable—Switches and what they add to value.

Many appraisers in the past have given manufacturing property a value based on units fixed for adjacent property. Such adjoining property might have been retail, wholesale, residential, warehouse or of other kinds. In view of the fact, however, that manufacturing property is generally bought and sold on a square foot basis, it is considered more advisable to give greater heed to the particular value than to seek uniformity with property used for a different purpose. It should, therefore, be appraised by the square foot as it is generally bought, sold and leased on that basis.

Railroad property should be treated likewise. In reality it is usually manufacturing property. While manufacturing property usually takes its value from railroad proximity, railroad property in turn (that is the value of public utility property proper) takes its value from the manufacturing property or other adjacent property as the case may be.

The value of railroad or manufacturing property is fixed by location, proximity to the center of the city, proximity to labor market, accessibility of good and cheap street car service, absence of costly cartage or grade connections with other railroads. In other words, the value of a railroad site is governed by its proximity to both a buying and selling market, the available means for getting there and the ability to command the necessary skilled and cheap labor as well as raw material. In Cleveland, for example, in the Cuyahoga River valley, not one-half mile from the center of the city, were formerly many manufacturing plants. The property is served by a number of trunk line railroads with good connections. In addition it fronts, in part, on a river navigable for boats of 18 feet draft and yet this property sells for about 50c per square foot, where it formerly sold for 75c per square foot as compared with $1.00 and $2.00 per square foot factory sites two to five miles from the center of the city. The property is in the flats, difficult of access for labor, difficult of approach for customers, involving extra cost in business intercourse with the rest of the industrial city. A leading realtor specializing on factory sites presented the subject in an interesting and instructive advertisement as follows:

"FACTORY SITE PHILOSOPHY"

"The Average Factory Spends:
20% of its sales in ground rent.
1% of its sales in rent.
30% of its sales in wages.
Labor (150 times as important as ground rent) is today the big problem in industries. A good location often pays for itself in the saving on cartage.
Buildings usually cost less in desirable sections.
Best sites usually show greatest increase in value.
The following points should each be studied with regard to the individual requirements of an industry.

LOCATION:

Amount and nature of labor supply.
Size, shape, topography, character of soil, accessibility, nature of roads, improvements in or obtainable.
Proximity of depots.
Side track, in or obtainable.
Desirability and reputation for service of available railroad.
Future value and publicity value.

THEREFORE LOCATE:

Near labor supply.

Where good street car service, short car ride, low car fare or short walk will attract labor.

Near depots.

On well paved streets.

Where sewer, water, gas, electricity, and other conveniences are installed."

Aside from the above general factors of value, other minor factors affecting the value of manufacturing property are evident. One factor of influence is the shape of the lot, as a long and narrow lot is usually not worth as much for general utility as a square piece. This is of considerable importance where the availability of the site for other purposes is possible or probable, such as for residences or stores.

A trunk line railroad connection enhances the value of a site more than a short line road. Several street frontages or access to them give more value than a single street or no street at all. In appraising several sites in the neighborhood it becomes important to weigh and appraise these factors. In one tract a ten acre tract fronts on a railroad for its entire width as compared with a site with only a short frontage. Another tract may have full railroad frontage and one street connection as compared with another with two street connections and perhaps a street car connection. As between several parcels in the same neighborhood each perhaps with different advantages, it is only as the appraiser attaches a particular value to each factor that proper differentiation is made. A railroad connection adds a value just as a street frontage does. Certain it is however that where different parcels enjoy different advantages an appraisal of each, crude though it may be, must be made to differentiate in their aggregate appraisal. For example, a certain tract in Cleveland has all of the following advantages: River frontage, canal frontage, three trunk line railroads, one creek, two street frontages, one street car connection, is near center of city and also has a pipe line connection. It is evident that the appraisal of such a type of manufacturing property requires far more study and lends itself to less uniformity than other kinds.

It is frequently contended, since such property is sold on a square foot or even acreage basis that every foot of land has a like value; that the long and short rule should not and does not apply. A prominent writer on real estate appraisals urges the same objection in warehouse and wholesale property valuations. Some appraisers even contend that the rear 100 feet of a 200 foot lot in a retail district is worth as much as the front and no difference in fact exists in the value of any such property except possibly that part of the front which is used for display or office purposes. This indicates a confusion of actual utility with possible utility. No matter how a certain business may actually use a particular part of a 200 foot deep lot, no matter if a warehouse or factory may use the rear to as good and profitable an advantage, the fact is that that part of such lots fronting on the street is worth more than the rear. This can be easily understood when before assembling several pieces into a larger unit, perhaps 200 or 300 feet deep, it is necessary to purchase parts thereof. It must be perfectly evident and experience proves that the value recedes as its location recedes from the point of accessibility.

It is frequently urged that this may be true as to retail property, but that warehouse or factory property is more uniform in value and that the short and long rules should be modified. In a questionnaire to realtors it was found that the sentiment for such a modification was very slight and that most of them were of the opinion that no differentiation of the long and short rule should be made in regard to such property. It is certain that no matter how property is used, advantageously or disadvantageously or not at all the front portions of lots are of greater value than the rear portions. Experience shows that owners of key situations, frontages on streets or other value creating agencies demand additional money for their land.

There seems a great variation in cities as to the value of manufacturing property. In Cleveland it runs up to $3 per foot, the average price being between 50 cents and $1 per square foot. The big blast furnaces in Cleveland occupying the Cuyahoga River valley are appraised at 85c per square foot. In Pittsburgh, however, manufacturing property sells for as high as $10 per square foot. Such values are only found, however, where the locality is changing to a higher use. For example, there is in Cleveland a property purchased fifty years ago in a district then devoted to manufacturing and, probably, purchased for a song. Very valuable improvements costing several hundred thousand dollars to reduplicate were erected. This land has now become worth about $500 per foot for a standard depth lot for business purposes.

While the assessor assessed the land for what he thought it would sell for retail purposes, it was found necessary to very largely depreciate the factory buildings on the ground of lack of suitability to the site. Manifestly he was not permitted to assess the land for retail use and the buildings for manufacturing use.

In this connection, consider the high tax burden of manufacturers located in growing cities. These concerns located originally, perhaps in the environs, where land was cheap. The city developed. Homes were built in the neighborhood. The land becomes worth more for other purposes and of course should be appraised accordingly. Such manufacturers, in competition with similar businesses, the country over, operating, perhaps, on cheaper land, are no longer able to compete. This operates as a serious injustice to such an old-established business. To move away involves scrapping the buildings, perhaps part of the machinery. Under such circumstances, the assessor, likewise the realtor, who appraises the land at its full value for other purposes, should depreciate the improvements as increasingly obsolete, no matter how good the structural conditions may actually be.

In a study of a complaint by a property owner as to the assessment of his manufacturing site, data was sought from one of the trunk railroad lines, as to the cost of building switches with which complainant's property, a 5 acre tract, was being served. The owner had approximately 1000 feet of side track and the question was what such a track, on a trestle, added to the value of his property. The data showing costs of building switches 1000 feet long is interesting and valuable in appraising factory property of different kinds and is as follows:

| 1000 feet | | Cost | Per Ft. |
|---|---|---|---|
| At grade | | $3,500 | $ 3.40 |
| On trestle (wood) | 25 ft. high | 35,000 | 35.00 |
| On fill | 25 ft. high | 25,000 | 25.00 |
| In cut | 25 ft. deep | 50,000 | 50.00 |

From the above it appears that the minimum cost of a switch is $3.40 per foot when 1000 feet long, running up to $50 per foot.

The ordinary switch is from 400 to 500 feet long, and requiring 150 feet to clear the main track. Four hundred feet would cost about 25 per cent extra, or $4.25 per foot. A frog and 150 feet to clear are necessary in any event. A 400 foot switch will therefore cost approximately $1700 on grade to $20,000 in a 25 foot cut or fill. From the above it may be deduced that a 1000 foot switch, costing from $3400 to $35,000 to $50,000, serving a 10 acre lot, increases the acreage improved value by from $340 to $5000 per acre. It follows whenever the acreage is larger the improvement cost per acre becomes less, and when the 10 acre lot is smaller, as it usually is, a much greater value per acre is added.

In the case under investigation it appeared that the 1000 feet on a wooden trestle would cost the owner, and probably improved his 5 acre tract, $35,000 or $7000 per acre.

## WATER FRONT PROPERTY

A few years ago a realtor in one of America's largest cities compiled data as to the value of water front lands in various communities. He sought to value water front lands in his city (where there had been infrequent sales( by the value of such land in other cities. The effort was of little use. There is no similarity of water front values in different cities. Some cities are so situated that their water fronts are not of great use, their railroad connections being extraordinary. It may be, also, that the water fronts in a particular city do not have satisfactory railroad or water connections, or that the harbor is not of proper natural depth, or is not properly dredged. Accordingly, the relationship between the amount of available water front property and its use or need to the particular city varies so greatly that there must be little relationship in its value.

The uses of water front property are frequently for other than dockage or transportation purposes. In some cities, for example, the water-way is used as a drain or sewer or for cooling purposes, or for filling-in, thus saving hauling and dumping charges. In some cities water front property is used only for storage or railroad switching, it having no more profitable use. In many cities it lies dormant without any use at all. Some cities have a large amount of water front while others have very little. In the latter case the demand for water front property may be great, while in the former it may be very small. Every city, therefore, requires a separate study for determining water front values.

## CHAPTER 17

## APPRAISAL OF ACREAGE AND FARM LANDS.

Different values compared—Reconciling acreage values with adjacent lots sales—Subdivided land worth more than adjoining raw acreage—Appraisal of farm lands—Rural land percentages.

In outlying districts, it frequently is necessary to compare acreage values of unimproved property with front foot values of a given depth. The following table is an effort to transmute acreage values into lot values of an assumed depth with streets 60 feet wide dedicated for the public use:

ARCREAGE AND FRONT FOOT VALUES COMPARED

| Value per foot | Depth of Lot 100 | Depth of Lot 150 | Depth of Lot 200 | Depth of Lot 300 |
|---|---|---|---|---|
| $ 2 | $ 670 | $ 557 | $ 461 | $ 340 |
| 5 | 1,675 | 1,393 | 1,153 | 850 |
| 10 | 3,350 | 2,786 | 2,306 | 1,700 |
| 20 | 6,700 | 5,572 | 4,612 | 3,400 |
| 30 | 10,050 | 8,358 | 6,918 | 5,100 |
| 40 | 13,400 | 11,144 | 9,224 | 6,800 |
| 50 | 16,750 | 13,930 | 11,530 | 8,500 |
| 60 | 20,100 | 17,716 | 13,836 | 10,200 |
| 70 | 23,450 | 19,502 | 16,142 | 11,900 |
| 80 | 26,800 | 22,288 | 18,448 | 13,600 |
| 90 | 30,150 | 25,074 | 20,754 | 15,300 |
| 100 | 33,500 | 27,860 | 23,060 | 17,000 |
| 150 | 50,250 | 41,790 | 34,590 | 25,500 |
| 200 | 67,000 | 55,720 | 46,120 | 34,000 |

In the above table, for example, it appears that a lot at $10 per front foot, if the neighborhood requires or is suitable for lots 150 feet in depth with streets 60 feet in width is equivalent to an acreage value of $2786. In another way, if such an acre cost $2786, lots would have to bring $10 per foot front to meet bare cost of the raw land. Of course, no one does business at cost. Costs of financing, of surveying, advertising, improving, selling, and overhead, must be added to secure the finished product.

The public seldom appreciates how much property is dedicated to public use by way of streets, alleys and parks, which, in some cities, runs as high as 26 per cent. A good perspective of the amount of public and other utilized area, as well as the amount devoted to private purposes, viz., residential, commercial and industrial, is found in the following table, which appears as an appendix to "Elements of Land Economics," by Richard T. Ely and Edward W. Morehouse, published by The McMillan Co., New York.

## PER CENT OF TOTAL LAND AREA DEVOTED TO VARIOUS CLASSES OF USES IN 16 CITIES—1923

| | [Publicly Owned Area—Improved] | | | | | [Privately Owned Area—Improved] | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Streets & Alleys | Parks | Miscl. | Total | [Unimproved] | Residential | Commercial | Industrial | Total |
| Columbus, Ohio ...... | 27.0 | 2.0 | 7.1 | 36.1 | 3.3 | 32.9 | 12.1 | 15.6 | 60.6 |
| Davenport, Iowa ..... | 14.5 | 3.7 | .5 | 18.7 | 36.8 | 42.7 | 1.2 | .6 | 44.5 |
| Detroit, Mich. ....... | 25.0 | 4.0 | 1.0 | 30.0 | 14.0 | 33.5 | 4.5 | 18.0 | 56.0 |
| Duluth, Minn. ....... | 26.9 | 5.0 | 1.0 | 32.9 | 64.1 | 1.8 | .2 | 1.0 | 3.0 |
| Flint, Mich. ......... | 16.5 | 2.3 | 3.6 | 22.4 | 21.3 | 52.8 | .5 | 3.0 | 56.3 |
| Knoxvile, Tenn. ..... | 21.1 | .9 | .8 | 22.8 | 17.7 | 48.5 | 1.9 | 9.1 | 59.5 |
| Lynchburg, Va. ...... | 13.2 | 2.8 | 2.7 | 18.7 | 13.5 | 50.8 | 10.2 | 6.8 | 67.8 |
| Minneapolis, Minn. ... | 20.3 | 10.9 | 1.1 | 32.3 | 22.8 | 36.3 | 1.5 | 7.1 | 44.9 |
| **Norfolk, Va. ...... | 23.3 | 2.4 | 10.5 | 36.2 | 9.5 | 33.4 | 2.5 | 18.4 | 54.3 |
| San Francisco, Cal.... | 22.3 | 6.2 | 6.6 | 35.1 | 26.7 | 32.7 | 3.3 | 2.2 | 38.2 |
| St. Paul, Minn....... | 20.3 | 3.0 | 2.4 | 25.7 | 41.1 | 26.1 | 1.3 | 5.8 | 33.2 |
| Toledo, Ohio ........ | 19.2 | 5.4 | 4.0 | 28.6 | 22.3 | 27.3 | 1.7 | 20.1 | 49.1 |
| Tulsa, Okla. ........ | 22.0 | 1.9 | * | 23.9 | 8.0 | 56.3 | 8.0 | 3.8 | 68.1 |
| Oak Park, Ill......... | 32.5 | 1.4 | .4 | 34.3 | 9.2 | 49.8 | 6.5 | .2 | 56.5 |
| Portland, Ore. ....... | 20.8 | 2.7 | 1.6 | 25.1 | 18.7 | 42.1 | 5.6 | 8.5 | 56.2 |
| Salt Lake City, Utah.. | 16.7 | 3.1 | 8.4 | 28.2 | 33.4 | 36.6 | .5 | 1.3 | 38.4 |

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*Extensive parks and other public lands outside of city limits.
**Excluding 7,500 acres recently annexed but undeveloped as to streets, parks, etc.

A most difficult matter is to reconcile acreage values with adjacent lot sales. For example, acreage may be offered for sale at $2000 per acre while neighboring lots in recently created allotments may sell at prices equivalent to $5000 per acre. It is argued in such cases that an assessment of $2000 per acre favors the owner as against owners of lots assessed on a much higher basis when transmuted into acreage. On the other hand, if the assessment of acreage is adjusted to the lot values and assessments, the acreage will be assessed at a higher price than it seeks a market for. It must be remembered that acreage after it is allotted, involves costs for surveying, improvements, financing, advertising and other overhead charges which increases the acreage cost probably two or three-fold according to the extent of the development. Complainants rarely appreciate that the subdivision of property involves dedication to the public and therefore loss to the owner of approximately one-fourth of the original acreage for street purposes. This matter is well presented by Lawson Purdy, formerly president of the department of taxes and assessments for the City of New York as follows:

"Assessors are often puzzled by the problems presented by lot developments or subdivisions, as they are sometimes called. A lot developer, when able to market the lots quickly, must ordinarily get about three times his purchase price in order to recover his money, secure fair wages for his labor, and some interest on his capital. If the sale is slow, he must get more than this in order to come out even. Sometimes assessors increase the assessed value of land that is merely marked out into lots by a series of stakes over the value of adjoining land not so marked for subdivision. If other conditions are the same, this is a great mistake. The mere marking out of a field adds nothing to its value. It is highly desirable that acreage property should be assessed just as much as land intended for subdivision. When the developer has, at his own expense, laid out streets and graded, paved, and sewered them, the lots are certainly worth more than before, provided there is any demand for the lots; but the addition to their value is generally no more than the cost of these physical improvements. The developer must then advertise his lots for sale, and issue a price list and sell them."

When assessors find a subdivision on one side of a street and unallotted frontage on the opposite side, the latter should not all be assessed as acreage. If the allotted frontage is, for example, 200 feet deep on such street, then the available lots on such street carved out of the acreage should receive the like assessment and value, having it is assumed the same public services and advantages. The balance of the acreage can then be assessed by the acre.

## APPRAISAL OF FARM LANDS

The most complex and involved methods have been devised for appraising farm lands, especially for land bank loan purposes. These banks under the law are required to appraise lands on an earning basis. It is therefore natural that officials connected therewith should have devised ingenius tables for such purposes. Such tables, of course, are worthless for assessing purposes which involves a wholesale job, seeking equity and uniformity as between owners. For the expert appraiser such data is likewise of little value for the following reasons: 1st, The earnings in any one year do not control the value of farms or other lands. 2nd, The average earnings of a number of years fail to reflect the speculative value or what property actually sells for. 3rd, It fails to appreciate the scientific or unscientific development of the soil. 4th, It fails to appreciate the value of the farm as a home.

Some economists who have given little or no thought to the problem of appraisal of land are inclined to assume that appraisals should always be based upon land income. There are three difficulties in the way of basing the appraisal, for instance, of a farm upon annual net income. First, the current net income of a farm cannot be obtained with any sufficient degree of accuracy for the needs of appraisal because of the impossibility of finding a value for such items as the produce and supplies used by the family, the family's use of the house and vehicles, the farm operator's labor and the family's own labor used on the farm. It is true that all of these are valued in many farm surveys that have been made. But the methods used have been arbitrary and in many cases based upon questionable economics. For example, valuing family labor at what it would cost to hire a substitute is bad economics. If farm-grown supplies are to be charged to farm families at what they will sell for at the farm, then the resulting net income must be capitalized at a rate that prevails at the farm.

The foremost authority on land appraisal in Europe, Prof. Friedrich Aereboe, of the Berlin Agricultural College (Hochschule), who has written a book on the subject of valuation of agricultural property, says: "The so-called valuation according to revenue is impracticable, unscientific and indefensible."

One of the most difficult problems in appraising farm lands, after agreeing on the average deduction after repairs, depreciation, insurance, etc., is that of the proper rate of capitalization. The United States Department of Agriculture, Bureau of Agricultural Economics, in a study made in March, 1925, as to the taxation of farm real estate in Indiana set forth the net earnings before deducting taxes of three classes of Indiana property as follows:

Table 13. Net earnings, before deducting taxes, of three classes of Indiana property as found in the survey of three counties.

| Year | Rented Farms | Rented City Real Estate | Banks |
|---|---|---|---|
| 1920 | 3.2% | 4.5% | 8.6% |
| 1921 | .... | .... | 8.7 |
| 1922 | 3.7 | 4.2 | 7.4 |
| 1923 | 4.4 | 5.2 | 7.9 |
| Average, 3 yrs. 1920, 1922, 1923 | 3.8 | 4.6 | 8.0 |

It will be noted from the above table that the per cent net earnings of rented farms in 1923 were 4.4 per cent, as compared with 3.2 per cent in 1920. These percentages are based on the owner's opinion of value of their respective properties, and shows that a rate 33½ per cent higher was necessary in 1923 than in 1920. In other words, if 6 per cent was a proper rate in 1920, 8 per cent would be a proper rate in 1923, and if 4 per cent was a proper rate in 1920, 5 1/3 per cent would have been proper in 1923. The fact of the matter is that farmers do not sell property on a theoretical capitalization of net earnings and hence they cannot thus be valued.

Some valuators not only attempt to appraise a farm on its earning power, but at a value by way of future increment. This, of course, is not appraising but guessing, and as there is no certainty as to whether farm values will increase or decrease, there must be a wide variation in these guesses. While it is true that land values are not based on this year's income but instead upon anticipated incomes, nevertheless sales will incorporate this prospective profit or loss and these, therefore, should control.

It must be remembered that every operated farm is, first, a manufacturing institution, having its raw material, material in process and manufactured product, its tools and machinery, its land, building and equipment, its wear and tear, its replacements, depletion, and labor problems just the same as any other manufacturing plant in the city. Second, the farm is a home. Third, it might be regarded a sanitorium since many farmers impute a value to its health advantages causing prices and value to inhere wholly unjustified by the farm's economic advantages.

There is but one way to appraise farm lands and that is by comparison with sales in the neighborhood. The value of farm land is controlled by the markets of the world. Thousands of industrial and farm workers are continually bidding for farm lands and thousands of farm owners are seeking bidders. The relation between these forces of supply and demand, dependent on industrial and farm conditions, cause the continual ebb and flow of these forces. There are a thousand reasons for finding more value in a farm and a thousand for finding less value. If the student of farm land values has accumulated a sufficient number of sales, if conditions as to soil, transportation, markets, etc., are alike, he is able to make an intelligent appraisal of the land in question.

A recent study was made in Minnesota of the effect of certain factors on the value of farm land which may be of interest to appraisers of farm property. Quoting from the Minnesota Technical Bulletin No. 9, the farms which were sold during the four year period, 1916-1919 inclusive, were compared as to their selling prices and as to their value with relation to certain factors thereof and the following results were obtained:

"For every increase of a dollar's worth of buildings per acre, land value increased $1.07 per acre.

"An increase of one point in the 'land classification' index increased the land value to $0.73 per acre.

"An increase of one point in the 'soil productivity' index increased land value $0.17 per acre.

"Land upon improved state roads averaged $21.92 more per acre than land upon dirt roads.

"Land tributary to the larger towns averaged $12.82 more per acre than land tributary to the smaller towns.

"For a farm on a dirt road and adjoining a smaller town, each mile from town decreased land value $3.42 per acre."

The land classification index was calculated on the basis of the amounts of land of different grades contained in the farm. The four grades used were: Woods not potentially tillable; woods potentially tillable; wild hay land; tillable land. These grades were given a weight according to their estimated value significance. The soil productivity index was based upon the average fields of the principal crops grown in Blue Earth county.

In appraising rural lands, when one has arrived at a general level of prices, it must be recognized that all parts of the farm are not of equal value, that shape of a farm makes a difference, that a long and narrow farm has less value than a farm fronting largely on a highway, that a farm fronting on a roadway has a key position when another farm in another ownership is behind it. For all of the foregoing reasons, it is necessary to evolve some standard whereby greater emphasis is given to front acre values than to rear acres. That such differentiation is necessary is evident when the following conditions of irregularity of lot lines appear:

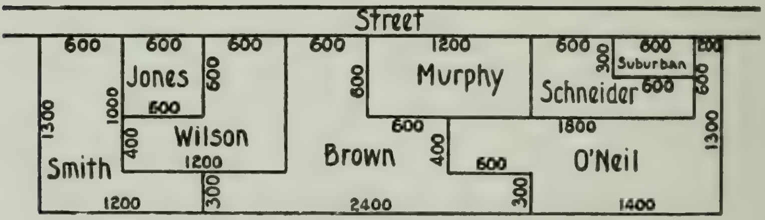
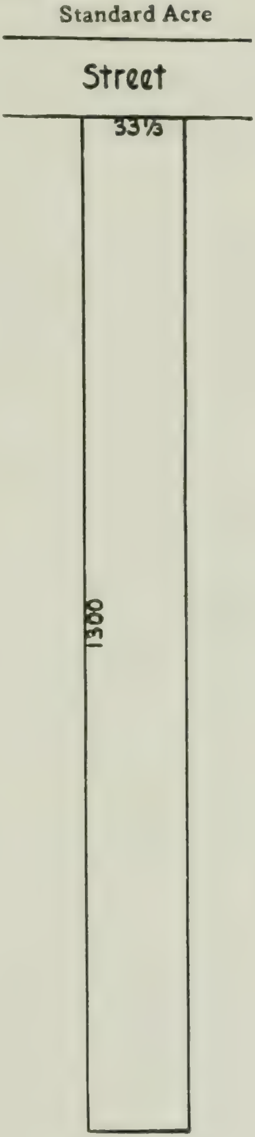


Diagram 25

Having in mind then the establishing of farm values in proper relationship to the whole, the appraiser should adopt a standard acre, which may consist of 33 1/3 feet front by 1300 feet deep. The prices per acre on the outline assessing maps then relate to a standard. When a farm or a part of a farm is of less depth than 1300 feet, it is worth the following percentage of the whole:

## RURAL LAND PERCENTAGES

| Feet | % of Unit |
|---|---|
| 25 | 5. |
| 50 | 8.8 |
| 75 | 12.55 |
| 100 | 16.25 |
| 25 | 19.9 |
| 50 | 23.5 |
| 75 | 27.05 |
| 200 | 30.51 |
| 25 | 33.71 |
| 50 | 36.71 |
| 75 | 39.51 |
| 300 | 42.13 |
| 25 | 44.57 |
| 50 | 46.83 |
| 75 | 48.71 |
| 400 | 50.85 |
| 25 | 52.77 |
| 50 | 54.67 |
| 75 | 56.54 |
| 500 | 58.37 |
| 25 | 60.17 |
| 50 | 61.91 |
| 75 | 63.61 |
| 600 | 65.26 |
| 25 | 66.88 |
| 50 | 68.47 |
| 75 | 70.02 |
| 700 | 71.53 |
| 25 | 73.00 |
| 50 | 74.42 |
| 75 | 75.79 |
| 800 | 77.12 |
| 25 | 78.45 |
| 50 | 79.76 |
| 75 | 81.06 |
| 900 | 82.34 |
| 25 | 83.60 |
| 50 | 84.84 |
| 75 | 86.07 |
| 1000 | 87.29 |
| 25 | 88.48 |
| 50 | 89.65 |
| 75 | 90.80 |
| 1100 | 91.92 |
| 25 | 93.10 |
| 50 | 94.14 |
| 75 | 95.16 |
| 1200 | 96.16 |
| 25 | 97.14 |
| 50 | 98.11 |
| 75 | 99.06 |
| 1300 | 100.00 |



**Standard Acre.**
**Unit 450 per Acre**

DIAGRAM 26

Reducing the above scale to multiples of 100 feet produces the following:

## RURAL PERCENTAGE TABLE—EPITOMIZED

| Feet | 100 Ft. | 200 Ft. | 400 Ft. |
|---|---|---|---|
| 100 | 16.25 % | 30.51 % | 50.85% |
| 200 | 14.26 | | |
| 300 | 11.62 | 24.34 | |
| 400 | 8.72 | | |
| 500 | 7.52 | 14.41 | 20.26 |
| 600 | 6.89 | | |
| 700 | 6.27 | 11.86 | |
| 800 | 5.59 | | |
| 900 | 5.22 | 10.17 | 19.04 |
| 1000 | 4.95 | | |
| 1100 | 4.63 | 8.87 | |
| 1200 | 4.24 | | |
| 1300 | 3.84 | | |
| 1300 (½ Zone) | 3 84 | | |
| Total .............. | 100% | | |

The above scale was created to produce the following approximate acre values, the values being the opinion of experts as to their proper relationship. The acreage value per acre is $450, there being six acres and the acreage value by zone as indicated.

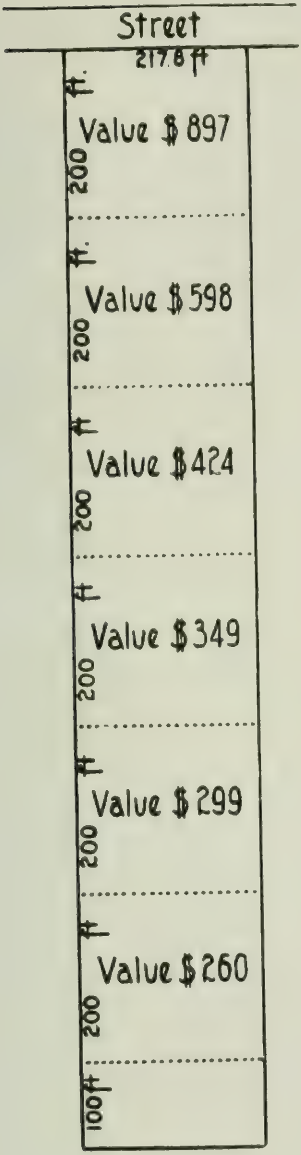


Diagram 26

Average Value $450 Per Acre Unit

| | |
|---|---|
| $897 | 200 ft. |
| 598 | 400 ft. |
| 424 | 600 ft. |
| 349 | 800 ft. |
| 299 | 1000 ft. |
| 260 | 1200 ft. |

6.534 units wide.

## CHAPTER 18

# ADVANTAGES OF STANDARDIZED ASSESSMENTS

Shall values be determined on a uniform or a particular basis?—Inconsistencies in appraising corners—Highly desirable that uniform method of appraising be established—Business man's greatest asset is knowledge that he and his neighbors are being treated on the same basis—Standardization of methods very desirable—Methods in vogue in other countries—Measures that will induce 100 percent assessments—The successful appraiser and his work—An asset to "be on the square."

An important question confronting every public appraiser is whether to value on a uniform or on a particular basis. The appraiser may seek the many conflicting evidences of value of land or buildings, and adopt some safe, sane, conservative, intermediate value; or he may, as it has heretofore usually been done, appraise each site or building on the sales price, irrespective of general values. He may note the sales as they take place and adopt the price as his appraisal. This latter plan involves friction, complaint, dissatisfaction.

Take four corners of a particular street intersection, all of like size and improvement and each worth $5000 on a certain date. A sells in April, at $7500, B sells for $10,000 in May, C refuses to sell his home, D sells for $12,000 in June. The A parcel is rented at a 10 per cent increase, the B parcel is rented at 100 per cent increase, C retains his home and knows nothing of speculative values or rentals and the D parcel is occupied by the new owner. These parcels may be appraised on their cost price, viz., $5000, $7500, $10,000 and $12,000 respectively. They may be assessed on their income or potential income basis at $5,000 to $12,000. The appraiser may encumber the records with such irreconcilable, distorted, incomparable appraisements, breeding dissatisfaction, complaint, irritation and even anarchy. He may be keeping one parcel on the duplicate at $5000 which may not have changed hands for forty years, or he may alter his assessment from $5000 to $7500 to $12,000 in a single year because it has changed hands at such figures.

On the other hand, he may appraise the land at its present fair selling value and the building on a reproductive, less depreciation, basis. He must compromise boom building and land values with normal values. He should not take the peak value, nor go to the other extreme and accept the low value. The former would do injustice to the owner, while the latter would work an injustice to the state in the loss of taxes.

From any viewpoint, it is therefore highly desirable that some uniform method of establishing values be adopted and that particularity of appraisement be, so far as possible, eliminated. No greater asset accrues to the appraiser than uniformity in appraisal. Nothing so discourages complaint. On the other hand, from the standpoint of the public, nothing so stimulates resentment, revolution and rebellion as a feeling of discrimination or favoritism in taxation.

The greatest asset of merchant, manufacturer or real estate owner is his sense of security in the enjoyment of equality of appraisement with his neighbor. His greatest burden is the suspicion that others are getting special consideration. Of what avail is it to the merchant, for example, to be appraised at 90 per cent or to get an abatement of 10 per cent when his competitor's is appraised at 80 per cent or gets 20 per cent depreciation? Only in the line of uniformity lies the duty of the appraiser. For tax purposes it matters little whether all property is appraised at 20, 50, 100 or 125 per cent of its true value, but it matters greatly if there is discrimination or even suspicion thereof. The appraiser, therefore, has an extraordinary opportunity for rendering highly constructive or destructive service to the community and public morals. Wherever possible therefore, the assessor should classify and standardize real estate, treating similar property alike, to the end that he lose discretion as to the amount of individual assessments, and that the taxpayer's assessment become merged into a general scheme of assessments. Much of the confusion of value is caused by insufficient standardization. "When it is borne in mind that the value of a square foot of a lot 25 feet deep is worth almost twice the value of a square foot of a lot 100 feet in depth and almost three times as valuable as the square foot of a lot 200 feet deep, it becomes evident that square foot values are not comparable and that a standard of depth both for capital value and rentals is absolutely necessary."

The advantages of greater standardization are, then, that the owner learns that uniformity of methods is applied and individual favoritism is impossible. The taxpayer discovers that things are conducted "on the square." It produces an equalization which is impossible of attainment after an assessment is improperly planned and completed. Equalization of individual properties takes place in the only way possible—before the assessment rather than after.

No great and lasting improvement in assessing conditions will be possible so long as an assessor stands alone, unsupported by proper administrative conditions or the pecuniary interest of the taxpayer. The assessor is usually required to assess real estate at 100 per cent of its value. All evidence submitted tends to depress values. All interests seek reductions, abatements, refunders. Not even has he in most cases the funds to hire experts in court to combat other experts hired by taxpayers. How, then, since values are opinion, since large latitude must be allowed in a general re-appraisal, since values for the last few years have been feverish and changeable—how may the assessor hold assessments to present values—themselves uncertain and ephemeral. Each taxpayer should be required to list his real estate as he is required to list his personal property. There should be penalties, of course, to compel his listing at full values.

Such a method of assessing real estate is not as novel as it may seem. A number of states now require the listing of real estate but fail to provide the necessary penalties to secure results. Hon. Charles A. Bonaparte, former United States Attorney-General, as far back as 1889, in an address delivered before the Landlord's Mutual Protective Association of Baltimore, advised that every owner of real property annually assess such property himself, and that he be obliged to sell it at the price he fixes within a reasonable time, with a right of preemption to the state.

The Commonwealth of Australia has taken an advanced position in this regard. Land is there listed the same as personal property is listed in Ohio. If the commissioner is of the opinion that the owner of any land *has undervalued the unimproved value of the land to the extent of 25 per cent or more,* the Governor-General may acquire the land on behalf of the commonwealth for the same estate or interest therein as the owner was entitled to. The proclamation entitles the owner to compensation therefor upon the basis of the improved value obtained by adding the fair value of improvements to the unimproved value stated in the return, together with the amount of 10 per cent upon that improved value, by way of an allowance for compulsory dispossession.

It is further provided under the Australian law that any person who with intent to defraud, in any return, understates the unimproved value of the land shall be guilty of an offense. The penalty is five hundred pounds and an amount equal to treble the amount of the taxes which would have been evaded if the value stated in the return had been accepted as the unimproved value of the land; or forfeiture of the land undervalued or any part thereof. Where the value stated in the return is less by 25 per cent or more than the value found by the jury, the value shall be presumed in the absence of evidence to the contrary, to have been understated with intent to defraud.

In New York, the income tax is apportioned to the taxing districts of the state on the basis of real estate assessments, a splendid method of creating public sanction for full real estate assessments which has in some taxing districts worked marvelous support and sanction for 100 per cent assessments. A bond limit law based on aggregate real estate duplicates that really limits the issue of bonds and makes them feel the pinch has done much for the cause of vigorous assessments. Other measures might be suggested to induce 100 per cent assessments of real estate, such as the following:

First: The taxpayer should not be entitled to recover any greater insurance for the destruction of his building than the value at which it is assessed and the balance should go to the state.

Second: In any foreclosure suit, after payment of the liens, the owner should be entitled to the remainder, only up to the assessed value; the balance should go to the state.

Third: In case a corporation or any public body possessing the right of eminent domain, appropriates any property, the owner should not be entitled to recover more than the assessed value.

Fourth: In case of a state increment tax, such as the federal authorities are now collecting, it might be provided that the tax should be levied on the difference between the sales price and the assessed value in the year of purchase.

If constitutional inhibitions confirm the state's impotency to deal with this situation in the manner suggested, perhaps some suitable remedy might be provided to take effect at the death of the owner. The right of succession being purely statutory, it might have a wholesome effect if the state at the death of the owner might acquire the property at the appraised value, as assessed for the general property tax. All of this, of course, sounds harsh and exceedingly drastic. Nevertheless, there is a conflict of interest between state and individual. The state must have its share of taxation, and must distribute the burden equitably. The individual desires to reduce his taxes, so as to increase the capital value of his land. It is to the real interest of the taxpayer, to the security of government and property that the administration of the law be supported not only by lip service but also by laws tending to strengthen this aim for full value assessments.

The efficiency and thoroughness of an assessor's work is measured by the public's appreciation of the difficulties and burdens and also by its estimate of the assessor's qualifications. The assessor should keep his work an open book, his cards placed on the table, so that his troubles may be made the public's concern. The assessor on every possible occasion should indicate that his job is that of the equalization of the tax burden. The increase in the tax burden should not be his object. Indeed, if he will become an advocate for reduction of expenditures, more careful budgeting, less waste and more efficiency not only in other departments but also in his own, he will find a sympathetic ear.

At the present time, the county assessor is frequently held responsible for the high tax burden. Always seeking more money, the tax-spending authorities dodge the responsibility for increased tax bills. They will whisper in the ears of the assessor for an increase of assessments, how badly they need more money, how the schools will have to close and children suffer, how mothers' pensions will cease, how firemen and police will be laid off, how the poorhouse will be poorer—but after the assessor has done his duty, he alone bears the responsibility. The tax spender has escaped. He never justifies tax increases. No friend left for consultation, for sympathy, for support, the assessor alone must justify the increased tax burden, where he should be responsible only for the equality of his assessments.

It is a big asset to a community that an assessor be regarded "on the square." To that end, he must show that he is not devoting his energies to boosting small properties while surrendering to the larger interests. If there is any bending over, it must be to get the big fellows, the large interests, first. The others then will gladly follow. He must take his own medicine in taxing his own property, paying rather too much than too little. He should never allow a closed door in his office. He should invite the assistance of civic organizations and directors of research wherever they may be of assistance. He should give vent to his ideas upon every possible occasion to the newspapers. He should, as far as possible, run the office on a non-partisan basis. Any assessment having a partisan basis or flavor must undermine the usefulness of the county assessor.

## CITY AND VILLAGE ASSESSMENTS

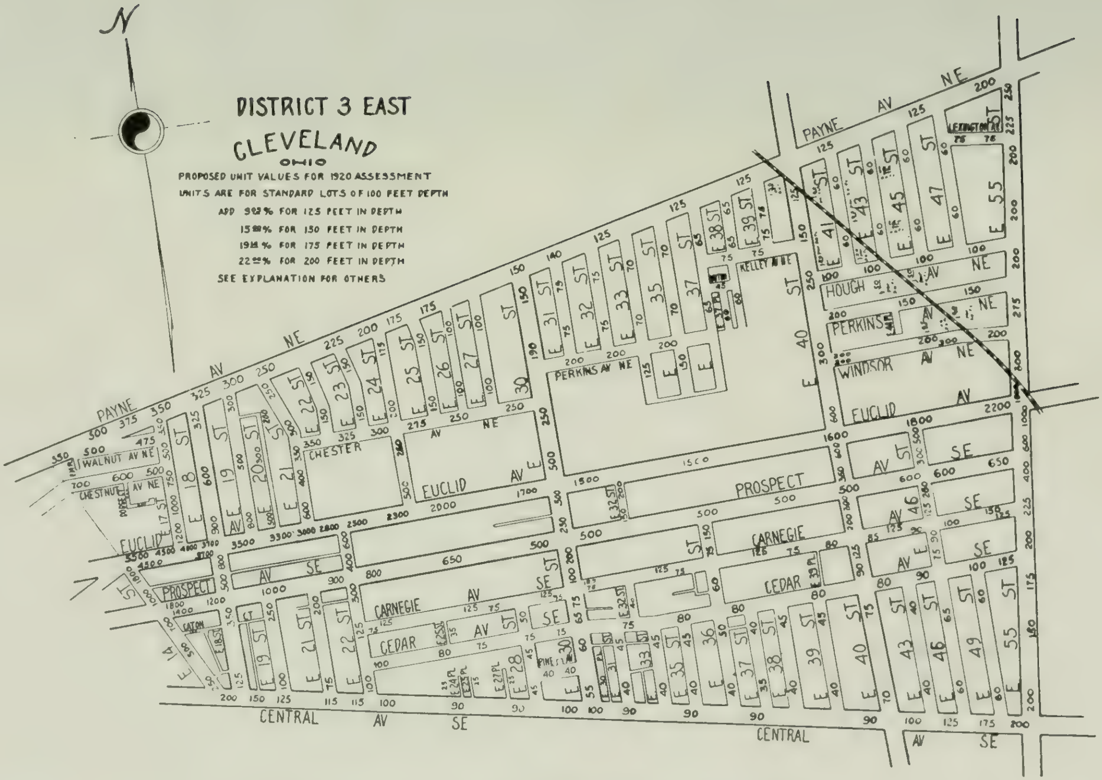
Before starting an assessment of a city or village it is necessary to assemble an organization of skilled employees. A county assessor should have a nucleus of skilled employees who thoroughly understand the land map system of the county. He should have on his staff at least one realtor and one builder, or architect. These employees may expand their organization to suit the varying needs of occasional assessments, as few states or counties re-assess every year. Indeed, the movement of real estate values is so slow that any re-assessment short of four years involves a great and unnecessary waste of money.

It is exceedingly important that there be maps showing the name, size and dimensions of each ownership, the date of purchase, the original lot number, subdivision and sublot.

In addition to such office maps, the ownership of each parcel should be alphabetically arranged as to each taxing district, so that any person may discover what property is owned by any particular person, when it was purchased, who the neighboring owner may be and what the assessed value is. This information is valuable for merchants, realtors, bankers and taxpayers in general. It permits easier comparison of assessment and thus tends towards wider criticism and discovery of errors and inequalities. Cards taken from the alphabetical list should be prepared, giving district, original lot, sublot, street, number of feet or acres. The cards may then be checked to white prints of the detailed maps showing the final unit values on the given streets. After establishing the land and building values, they should be copied on cards as to each parcel so that comparisons may be easily made, errors may be more easily discernible and omissions checked.

The successful assessor must maintain an information bureau, must file all information received as to sales, leases, mortgages, private appraisals, newspaper clippings and asking prices, these should be filed and given a number which should be entered opposite the detail maps, so that the assessor on looking at the maps is immediately apprised of available data at particular points. As this data is submitted, the estimated value of the building should be deducted and the land value reduced to a standard unit foot value, giving in parallel columns the present assessed value and sales or lease value for easy comparison, thus immediately advising the assessor of the adequacy or inadequacy of his assessment.

Outline maps should be prepared showing no individual lot ownerships, but showing blocks and street intersections and general designations only. The principal benefit to be derived from such a map is that when the unit values for a standard lot 1 foot x 100 feet deep are spread out on a map, it is then possible



## OUTLINE MAP FOR ASSESSING PROPERTY

Above may be seen a typical outline map used for notifying the public at large as to per foot front values in different parts of a city. Street names are inside of the lot lines, while approximate values for frontage may be seen in the strips reserved for streets proper. These values are based on a strip one foot wide and 100 feet deep. Aditional depths carry greater values as determined by the Cleveland depth tables.

to intelligently study and compare the relative values. Unit values in such maps mean the value per front foot 100 feet in depth of a normal or inside lot not within 100 feet of a corner. These would not be drawn to a scale and would have for their purpose the informing of the taxpayer as to the location of his proper street block. With these outline maps, which may be prepared by the layman, it is desirable that the most valuable property be first appraised. It is advisable that the assessor submit copies of such district map to the best realtors and bank appraisers, who may place a unit value within the appropriate street lines and blocks. If such realtor is not accustomed to the unit value of calculation, he may fix a price for the prevailing depth of the given block and street. In such case, it would be necessary for the county assessor to reduce the given figures to a unit basis. Having these reports the assessor might strike an average to secure a composite opinion and then accept the same or add or deduct as he may see fit. Such result should be given the widest newspaper publicity as a tentative appraisal, subject to a general taxpayers' hearing at a fixed date. If possible, the maps of the more important districts should be printed in the daily newspaper of largest circulation. After the units on the most valuable districts have been fixed, other contiguous districts should be handled in the same manner, and a hearing held as to each district on a particular day.

In addition to newspaper publicity, maps of the different districts should be printed with unit values and distributed to each grocer, druggist, barber, merchant, manufacturer and householder. Appropriate tables should also be printed instructing the taxpayer how to calculate his tax valuation from the units submitted and with the further directions that complaints be forthwith submitted.

As to adjacent villages near large cities, it is customary to allow the municipal council and school board members to select an honorary committee of three who function as a Board of Assessors and Board of Complaints. This board, composed generally of men who would scoff at public office and who function without compensation, appoints an appraiser who becomes a deputy county assessor. After receiving appropriate maps and descriptions, he takes his instructions from the county assessor.

It is necessary before he proceeds that he get outline maps showing the average values for a standard farm lot of a given frontage and depth with normal, topographical, geological and fertility conditions in adjacent taxing districts, to the end that there may be correspondence as far as possible of his proposed assessments with adjacent city, village or township assessments. After an appraisal, each owner is notified of his or her appraised value with a request that complaints be filed with the local Board of Assessors, which then functions as a Board of Complaints, and later submits corrected listings for the assessor's acceptance or modification.

Village property frequently depends so much on topographical and soil conditions that it will be advantageous to leave assessments as largely as possible to local authoritites enjoying the fullest respect of the community. Only in this way will real estate assessments become popularized. At the same time, to insure as great a uniformity as possible, it is advisable that the local deputy assessor appointed in the manner indicated should seek to secure the fullest information as to neighboring conditions, land and building factors, which the county assessor alone can impart.

In Cleveland in 1910, without previous organization and with but six months in which to appraise, assessments, except as to more valuable retail business districts and main arteries, were initiated by civic, business and improvement associations. Everywhere the assessing board sought to use these organizations and to inculcate the idea that a good taxation system required a high degree of civic duty, personal sacrifice and moral integrity on the part of the taxpayers. With the main arteries and valuable properties fixed at 100 per cent, the assessors figuratively had many friends in court to insist on full values for other property. In 1917, with but a few months available for the purpose, the land values of Cleveland were again fixed by what was known as a "Community Assessment." While the assessments were all initiated by the county auditor, the equalization was effected through community meetings, generally at public school auditoriums, after distribution of proposed unit value maps. These meetings were attended in some cases by over a thousand taxpayers. With the tables submitted, property owners were able to figure their own assessment in ninety-nine cases out of a hundred. Objection has been raised that property owners are not conversant with values. This, of course, is largely true as to business property, but it is surprising within what narrow limits residential property sells. In 1910, three-quarters of the improved residential streets were valued at between $20 and $30 per foot, while the unimproved lots were selling at from $10 to $20. The improved streets in 1923 are worth from $30 to $60, perhaps largely due to the lower value of the dollar and particularly due to the increased cost of street improvements.

Where the assessing authorities have the necessary time it is advisable that they initiate the assessment in cities and large villages as heretofore suggested. In small villages and townships especially where there is little uniformity of lot areas, topography or soil, leave the work, at least the judicial part, to an assessor of local selection. Confidence in the assessor is the sine quo non in these matters. The preparation of maps, the detail of calculation and the final determination of the equality of the assessment must remain the duty and responsibility of the county assessor.

In the matter of complaints, the assessor should require full and candid information from the complainant before taking any action thereon. (See addenda for a copy of the complaint blank used in Cuyahoga county, Ohio.) The burden of proof is on the complainant. A mere complaint that particular property is over-assessed without affidavit as to supporting facts should never be considered. The complainant should state the cost, the date of purchase, the date and amount and holder of the mortgage, the insurance carried, what the owner is willing to sell for; if a corporation—what the property is carried on the company's books for, etc. If complainant says he is willing to sell for less than the assessment, an option running to a third party, preferably a real estate board, for a reasonable time should be required, thus testing the credibility of complainant's statements. In our experience—not in one out of twenty cases will an option come. The data should as far as possible be sworn to by the owner, not by a paid agent. A copy of the form used in Cuyahoga County is found in the appendix.

Complaints are best ironed out by giving the owner a personal hearing, by submitting the detailed maps showing his assessment and his neighbor's on his street and on neighboring streets. This will indicate the impossibility of changing his land assessment without changing all. In asking him for advice and direction, the taxpayer will arrive at an impasse. Invariably the taxpayer leaves the office satisfied that he had his day in court, that the assessor's job is no joke, that his own assessment is fair and can't be changed, and perhaps that the assessor is a good fellow.

When buildings do not permit of standardization, assessors should use their assessing powers to secure cost data, instead of the cumbersome, irritating and delaying method of subpoenaing with books. Notice of an assessment, purposely over-appraised, will bring the taxpayer in more quickly with an affidavit of cost than a subpoena. A reduction to reasonable limits will do no injustice to the state and incidentally will make the assessor a "regular fellow." Assessing is frequently countered with bluff by the taxpayer. The assessor should accept the challenge and give as well as take. In this way the assessor may become the best informed judge of changing building values in the country, equipped to combat frivolous statements of value and erroneous statements of costs by interested taxpayers and frequently by well-paid experts.

# CHAPTER 19

## SPECIAL ASSESSMENT METHODS

Problem of assessing for special improvements a puzzling one—How some cities assess by special districts, according to benefits bestowed—A comprehensive system, and how it works—How corner lots are considered in such appraisals—A typical assessment and how it is arrived at.

With the enormous annually increasing tax burden, more and more demand is arising for the assessment of property for special improvements according to benefits conferred rather than to be paid out of the general fund raised by general taxation. For example, the creation and maintenance of parks are financed in the City of St. Louis by special assessment within definite park districts. The City of Cleveland now installs white way lighting systems, the cost of which is assessed upon the property benefitted thereby. Some cities levy special assessments for outlying bridges. Special assessments are also being used for financing irrigation, drainage, excess condemnation, repaving, and rapid transit, as well as water, sewers, sidewalks, paving and grading improvements. In some cities special assessments are being levied for such novel purposes as tarring of roads, cleaning, repairing and sprinkling of streets, planting of trees, street lighting, ash and garbage collections, etc.

With the increasing use of this form of taxation arises a demand for more equitable and scientific methods of assessments. While lots of a rather uniform depth in cities permit of an assessment on the frontage basis without doing any great injustice, in smaller communities where village lots adjoin farm tracts, where areas and depths vary, 5, 10, 15 and even 20 to 1, where benefits may be direct as to some properties and indirect as to others, such assessment methods work great injury, discrimination and injustice. In cities, when an improvement such as paving, sewer, water etc., is projected, adjacent streets are probably to a large extent already so served. In townships and villages such improvements are in their infancy. Projected improvements in such communities reflect their prospective value as to properties on other main paved streets.

R. F. McDowell, Sanitary Engineer of Cuyahoga County (Cleveland) has instituted one of the most comprehensive, scientific methods of assessment now in use. Describing the administration of sanitary sewer assessment, he says:

> The Ohio sewer district law specifies that the assessments for improvements constructed thereunder shall be levied upon all property in the district proportionately and in accordance with the special benefit conferred. The law does not specifically provide that the assessment be levied by area, frontage, valuation or any other particular manner. However, it is clear that some method must be found to measure the benefit which accrues to the lots and lands to be assessed, part of which is allotted and partially built up, and the balance undeveloped farm land.
>
> Many improvements, as the larger water mains and trunk sewers, will of necessity be for the general welfare of a large area and should be so assessed. Though these mains give to the abutting properties a distinct and special immediate benefit, such properties cannot be expected to pay the entire cost of the improvement. It then becomes necessary to assess the equivalent cost of a local improvement upon the abutting property and to spread the balance or excess cost over all of the benefited property, including that assessed for the local cost.
>
> The foot frontage method is without doubt the most favored plan of local assessment, especially in cities, and while it does not entirely conform to the principles of benefits conferred, it is capable of adjustments to correct many of its faults.
>
> When frontage is to be made the basis of the assessment, there should first be determined the amount of such frontage to receive a benefit; also whether such frontage received full or partial benefit. By partial benefit is meant the frontage which, though receiving some benefit, does not receive the full benefit accruing to other parcels in its vicinity. A lot may be so shaped as to have much frontage but little area for building purposes. For example, we may have a lot shaped very much like a half moon and having street frontage on all three sides. An assess-

ment at a universal standard rate per foot on such a lot would be practically confiscatory and diametrically opposed to the principle of assessment by benefits conferred. Conditions of this kind will be found in varying degrees with more or less regularity and it is therefore necessary to formulate a scheme of tempering and adjusting the frontage method of assessment so as to insure a fair and equitable distribution of costs. The foot frontage method, however, can, with a few modifications, be used alone for the local assessment. It has the advantage of being comparatively well understood by the public and for that reason is less likely to draw criticism. The depth should be considered along with the frontage, since a shallow lot has little capacity for buildings, yet an extremely deep lot will probably receive but very little more benefit than one of moderate depth, since it is unlikely that it will be as intensively used as the latter.

It is therefore reasonable to assume that the benefit to property increases with diminishing rapidity as the depth of the lot increases, up to the point of maximum local benefit. It can be readily seen that the benefit is not directly proportional to the depth of the lot, and is found to be best expressed as a curve, approximately a parabola in shape. For sanitary sewers and water mains we have established a depth of 100 feet as the point where such local benefit ceases, so that property with a depth of 100 feet or more is assessed alike as to frontage.

To illustrate: each foot of frontage having a depth of 100, 120 or 150 feet is assessed as one frontage unit, while each foot of frontage having a depth of 75 feet is assessed as being 0.88 of one frontage unit. At a depth of 50 feet the value of a foot of frontage becomes 0.725, and at 25 feet, 0.475 of a frontage unit.

## CORNER LOTS

A rectangular corner lot, if over 100 feet in depth, will thus be assessed twice at such time as improvements are installed in both streets, the secondary street being assessed for the amount of frontage on such street in excess of 100 feet, computed by the preceding rule which allows for a reduction because of shallowness (depth).

For example, a corner lot having a frontage of 40 feet on street "A" and 150 feet on street "B" will be assessed for 40 frontage units on street "A" since the depth of that frontage exceeds 100 feet. The frontage on street "B", the side street, will then be assessed for 50 feet, being 150 feet (the total depth) minus 100 feet (the amount of exemption). This assessed frontage of fifty feet will have a depth of 40 feet which gives a value of 64 per cent. Sixty-four per cent of 50 feet gives 32, the number of frontage units to be charged against the corner lot for street "B."

Many sewer and water main extensions or improvements give an immediate local service and benefit to both developed and undeveloped lands. Those lands now allotted have numerous street openings, while the undeveloped lands do not. Some distinction must be made, therefore, to prevent an unduly heavy portion of the costs being borne by the undeveloped property. If these future street openings are anticipated and deducted from the total frontage, an equality of assessment is secured for both farms and allotted lands, and the number of frontage units secured is thus computed on the same basis over all the property assessed. That part of the total cost which is computed to be equivalent to the cost of a local improvement can then be divided by the total number of units benefited and a rate thus derived for use in computing the individual local assessment.

## DISTRICT ASSESSMENT

The balance obtained after deducting the local from the total cost of the improvement must be considered as a district cost and benefit, and should be spread over the property in the district in an equitable manner.

The limits of the assessment area having been previously determined, it is only necessary to distribute this amount, as stated in the sewer district law, as nearly as may be in proportion to the special benefits conferred.

That property which is located at the extreme limits of the assessment area will be much less benefited than the property in the immediate neighborhood of the improvement because of the time which must elapse before extensions can be made and because of the future costs of these extensions which the outlying property will be expected to pay. A district assessment of this kind should be so apportioned that when like improvements have been installed throughout the assessment area, each parcel of a standard size shall have paid the same total, as of the date when such future improvements are provided. This may be done by dividing the territory into zones or sub-districts, each of which will be expected to bear alone the cost of some certain extension of the system, and estimating the date at which such extension will be necessary. A rate of assessment can then be secured for each of such zones or sub-districts which will give approximately the desired results.

That section of the territory which abuts upon the improvement and is charged for the local cost, should also receive the highest rate of district assessment because no future time element is to be considered, and no future costs need be borne. The property next adjacent will usually be next in point of time to receive extensions, and probably at less future excess cost than zones farther away. This scheme of creating zones or sub-districts may be extended as far as is deemed practicable.

The plan of basing the district assessment entirely upon the area of the property has many advantages, the chief one of which is its stability. Reassessments and future extensions can be made without difficulty since the area is not subject to change as are some other factors.

However, in order to prevent the farm lands from bearing an unduly heavy portion of the assessment, it has been found necessary to reduce this superficial area of the farms by 20 per cent to allow for future streets. The farms and allotted areas are thus brought to a common basis designated as area units.

After having determined the number and the limits of the various area zones, it is necessary to estimate or compute the future excess costs of like improvements per area unit for each separate zone. The proportional benefit to be charged against the zone can then be determined by comparison with the total excess cost per area unit as determined to be the average over the entire district.

By so doing each zone is charged with having received from the present improvement a certain percentage of the total excess cost which it will at some time be expected to pay. The probable length of time to elapse before full use is made of the improvement must be estimated and the present worth of one dollar at such future time computed on that basis for each separate zone.

By multiplying together for each zone the factor representing its proportional benefit, the present worth of the improvement and the number of area units benefited, a representative factor is secured which gives the proportionate part of the excess cost which each of such zones or sub-districts should bear. The total amount in dollars so charged against a zone, when divided by the total number of area units therein, gives the rate per unit for use in computation of the individual assessments.

A typical assessment for a water main in a country district was spread as follows:

**Local Assessment**

| | |
|---|---|
| 28,063.23 Frontage Units @ $2.60 each | $72,964.40 |

**District Assessment**

| | |
|---|---|
| Zone 1— 86.594 Area Units @ $60.00 each | 5,195.64 |
| Zone 2—984.568 Area Units @ 20.00 each | 19,691.36 |
| Zone 3—469.925 Are Units @ 10.10 each | 4,746.24 |
| Total District Assessment | 29,633.24 |
| Total Local Assessment | 72,964.40 |
| Grand Total Assessment | $102,597.64 |

The stupendous increase of expenditures in recent years has caused public authorities to seek additional ways and means for securing improvements without invading the public exchequer. In consequence, many improvements, formerly financed at public cost, are now financed by special assessments, resulting in many cases, in assessment charges equal or in excess of the value of the property. While the constitution or laws of some states limit the extent to which such method of financing may be employed, others do not. The question then arises, may taxing authorities impose taxes in excess of the value of the property.

The supreme court of Illinois in Village of Milan v. Looby, decided April 23, 1926, 151 N. E. 501, reiterates the rule that the extent of special assessments for a public improvement must be limited to the benefits accruing therefrom to the property taxed. In this case the court on appeal, reversed a confirmation of a special assessment upon the ground that it did not plainly appear that the lands taxed would be benefited to the full amount of the assessment.

A similar question arose in Engstrom v. Wichita, in the supreme court of Kansas. In this case the court enjoined an assessment against the petitioner's remaining property of the full value of a certain part of his lands taken for a street improvement, on the ground that it was prima facie confiscatory. While the facts in this latter case closely resemble those of Norwood v. Baker (172 U. S. 69) the decision falls within the principles of French v. Barber Asphalt Co. (181 U. S. 324) and other later federal cases which modified the rule laid down on Norwood v. Baker. Milan v. Looby, however, would seem to follow Norwood v. Baker in holding that the question of benefits is a question of fact and always open to judicial review. It may be noted that the courts of Indiana also refuse to accept the legislative declaration of benefits as final and reject the present federal review of the relation of the tax to benefits only in case of apparent confiscation. (Harmon v. Bolley, 187 Ind. 511; 120 U. S. 33).

## SPECIAL IMPROVEMENTS COSTS

It is frequently necessary to have a knowledge of special street improvements to compare lot values which may be improved or unimproved.

The following are figures pertaining to costs of street improvements as furnished by the engineering department of the City of Cleveland for the year 1927:

| | Cost Per Ft. | Payable in Installments |
|---|---|---|
| Paving (brick) | $9.75 | 5 |
| Sewer | 4.00 | 5 |
| Water | 2.25 | 3 |
| Sidewalks (cement) | 1.70 | 1 |

| | | |
|---|---|---|
| Sewer connections | 1.00 | 1 |
| Water connections | .62 | 1 |
| Total | $19.32 | |

The above paving price of $9.75 is for brick pavement with a roadway 28 feet wide. This price includes the cost of grading and curbing. The price indicated for paving as well as each of the other items covers the interest charge for the duration of the bond. In other words, these prices are the prices charged to the property owner and are not the cost to the municipality. Asphalt and bitulithic concrete will be found to cost somewhat less, depending on the thickness of the concrete base while heavy block stone pavements will probably cost 50 per cent more.

The cost per lineal foot for paving vary, depending upon the width of the street, character of soil and other conditions. An average roadway is 28 feet, resulting in an average charge of $9.75 per front foot. It costs 27c per square foot for sidewalk. The average sidewalk is 6 feet wide, which would involve a cost of $1.62 per lineal foot if paid direct to the city. When collected by the assessor a 5 per cent penalty is added, making the cost per lineal foot $1.70. The sewer connection is based on a cost basis of time employed and material used. Accordingly, these costs vary, depending upon the difficulties encountered in digging a sewer. For instance, a sewer installed through shale or rock would be much more expensive than sand or gravel. The average cost for each sewer connection installed is $40. The water connection is based on a flat charge of $25 for each connection. If each sewer connection cost $40 and each water connection $25, assuming the lot to be 40 feet front, the cost would be per foot $1 and $0.62 respectively.

The charge of $4 per foot for sewer might be inadequate where a double system, storm and sanitary, is employed, in which case a cost of $6 or $7 would be more correct. Under such circumstances a deeper and wider trench is necessary. In some cases quicksand or rock conditions increase the cost still more.

The above charges for improvements would result in an average cost of about $20 per foot front, depending on topographical and soil conditions, duration of payment, on honesty of administration, efficiency of labor, etc.

Assuming that $3000 is a minimum value for residential acreage available for subdivision purposes in the larger cities, lots 40 x 150 feet in size with a fifty foot street should represent a raw land cost of $12 per foot front without any allowance for developing or financing the allotment. In other words, the improvement cost of $30 plus the raw land cost of $12, makes $42 per foot front the minimum cost and value of improved city property. This is believed to be, generally speaking, double the pre-war averages.

In place of the above brick paving charge, it may be necessary to substitute the following more expensive pavement costs:

| | |
|---|---|
| Sheet asphalt | $10.50 per foot |
| Reinforced concrete | 10.50 per foot |
| Medina stone | 15.00 per foot |

It is true that many streets are improved more or less at the expense of state, county, or city. In the large cities, however, this expense is charged against adjacent property in special assessments, running from one to ten years. It would seem of little consequence who pays for the improvement. It is there. It adds to the value of the adjacent land. It is fair to assume, except as to main thoroughfares over township areas, that the cost of an ordinary improvement necessary or advantageous to the adjacent land adds its cost to the land value.

Figures compiled for the average costs of road improvement in Ohio for the period from July 1, 1923, to December 31, 1923, by the Ohio State Highway Department, were as follows:

| | |
|---|---|
| Grading and drainage structures (This includes no pavement) | $10,890 |
| Grading and drainage structures for pavement with Waterbound Macadam | 23,650 |
| Bituminous Macadam | 25,720 |
| Kentucky Rock Asphalt on Macadam Base | 26,820 |
| Reinforced Concrete | 34,060 |
| Bituminous Concrete (Topeka Mix) | 37,400 |
| Brick on Concrete Base | 40,690 |
| Reinforcing macadam roads with bituminous macadam | 16,060 |

The width of the roadway on all these projects ran between 26 and 28 feet and the pavement between 16 and 18 feet, approximately evenly divided. Three types prevail in Ohio, there having been about 800 miles of each type constructed in the state system by the year 1924. These respective types cost on a per running foot basis, as follows:

| | |
|---|---|
| Bituminous macadam | $4.87 |
| Reinforced concrete | 6.45 |
| Brick on concrete base | 7.71 |

These amounts cover the cost per running foot. Whatever assessment is laid would naturally be apportioned to each side of the street and would probably carry an interest charge of 5 per cent for the life of the bonds payable, generally, in 10 years.

## CHAPTER 20

# UNSCIENTIFIC BOND ISSUE APPRAISALS

Dangerous practices in vogue which must be corrected—Lack of scientific appraising deplored—What an appraisal should show—Securities must be based on true and proper appraisals—The selling of bonds depends upon honest valuations.

Real estate investments, being regarded as the most stable, the safest and the best secured investments obtainable, have grown in favor by leaps and bounds during the last few years. In many instances the land is leased to a corporation at a fixed rental, and the fee is transferred to a trust company. Land trust certificates are then issued thereon. Then a building is erected and sub-leased. Leasehold bonds may then be sold on the security of the leasehold. The sub-lessee issues preferred stock based on its favorable lease. All of these investments require the retaining of expert appraisers upon whose favorable report bonds may become marketable.

The enviable position which all real estate securities have enjoyed for so many years affords a fertile field for manipulation by unscrupulous bond-sellers and appraisers to unload securities of doubtful value. In order to float such worthless securities, incompetent appraisers are hired, who for a small fee, furnish any appraisal requested. The growing evils resulting from these worthless appraisals have recently engaged the attention of real estate boards, bankers, as well as building owners and managers, throughout the country to such an extent that The National Association of Real Estate Boards at Detroit in the year 1925:

"Resolved, That it goes on record as decrying the use of inflated appraisals or unauthentic or inaccurate valuations either for the purpose of financing or of selling buildings to the public; and, Resolved, That it recommends to the constituent boards of this association that steps be taken to discipline any members of such boards using, permitting, or making appraisals which cannot be fairly sustained by the fact, and which tend to deceive the public as to the values of the properties involved."

A. C. Danenbaum of Minneapolis, Minnesota, of the Appraisal Committee of the National Association of Real Estate Boards, in commenting on the situation, as late as the spring of 1927, said: "In some cities it is not unusual for a piece of property to be bought at full market value and then to issue Land Trust Certificates for considerably more than the purchase price and then lease the same to a corporation owned by the same parties who promoted the other deal. They then arrange to build a building on the property, and, through optimistic or padded appraisals on the proposed buildings, and through optimistic showings of returns, they have been able to secure appraisals showing a very large value in the leasehold. So, with this value that does not exist placed on the property, and that of over-valuation on the building, they are able to finance for considerable over the cost, thus making large sums on the promotion.

"One thing that some of the members of the Valuation Committee of the National Association wish to discourage is: On new buildings to be erected appraisers place added value to the property over what they would otherwise because of optimistic statements of earnings furnished by the promoter. No credit should be given until the building is erected and fully rented and such earnings proven."

Bond brokers in marketing real estate securities usually issue a statement from private appraisers to the effect merely that "the value of the premises in my opinion is $........" Based on such unsupported opinion, millions of dollars worth of real estate bonds have been sold annually. In some cases the underlying rentals are not even given, so that the investor is absolutely at a loss to know whether the lessee has any interest of any value whatever in the property. Buyers of securities certainly should not be content with this.

In many cases the underlying lease calls for a rental, which, capitalized, is far in excess of the sale value of the property.

There was, for example, a lease executed on property at rentals commencing at $18,000 per year and running up to $30,000 annually, payable in fifteen years. A handsome building costing $600,000 was erected thereon by the lessee. The building was poorly sub-let, the original 99-year lessee finally defaulting. The lessee's interest, essentially the building, was later sold for $300,000, representing but a part of the value of the bonds.

What will a purchaser buying the building and lease get? The lease calls for $18,000 yearly, which capitalized at 6 per cent equals $300,000. The land is worth perhaps $250,000. If the lease rentals were not on a sliding scale, the $50,000 could be absorbed in a reduced building value, but a purchaser must gamble that the land in fifteen years will be worth $500,000, involving a loss of $250,000. A purchaser who is not willing to prophesy a future value of $500,000 must offer for the building $250,000 less than it is worth for other purposes or to reproduce it.

The prospectus of real estate securities should be prepared by appraisers known for their conservative appraisals. It should give the underlying facts supporting the appraisal. If a lessee's estate is being appraised, the terms of the lease rentals should be set forth. In any event the present value of an unencumbered fee should be given, together with citations of other sales or leases in the vicinity upon which the appraiser is relying. Only in this way can an investor determine the lessee's equity.

The land and building should be appraised separately. The land value should be supported by citations of other sales or leases in the vicinity. The assessor's appraisal for taxation should be shown. The building value should be supported by citations of cost of similar buildings on a cubic foot basis. It should set forth the anticipated rentals and give the underlying data supporting such hope or belief. In the case of store rentals, then other actual store rentals in the neighborhood should be set forth on a square foot basis. If office rentals are relied on, then other office space rentals, as represented by the owners or managers thereof, should support the appraisal.

The prospectus should show the number of the net available square feet of office space as well as the net amount of store space. The prospective rentals should be examined as to character and financial responsibility of proposed tenants. The author knows of a bond issue issued by a 99-year lessee which showed a fine rental set-up a few years ago. The ground floor was leased in part as a moving picture house at $25,000 per annum, which failed within 30 days. Upstairs space was leased at $20,000 for hotel purposes. The lease ran to a lessee company composed in large part of directors of the lessor company. One-half of the basement was leased to a restaurant for $3600, which never paid a cent of rent and had to be ejected. The other half of the basement was leased as a billiard parlor, and that tenant was also evicted. The hotel's rent was reduced from $20,000 to $12,000 per year. This lease, based on these enormous prospective rentals, was appraised by reputable appraisers at about $1,600,000. Bonds were issued and finally sold in the sum of $700,000, the proceeds being used in erecting extensive improvements. The bond interest was not paid and at latest report the receiver was trying to sell the 99-year lessee's estate for $400,000.

The set up should show the percentage and amount allowed for vacancies, maintenance and operation, depreciation, taxes, insurance and management. These amounts should correspond with the percentages enjoyed by office buildings generally, which latter should be set up specifically. The cost of operation is such a large factor, that the experience of similar buildings should be given on a square foot basis. It should set forth the amount of taxes for the current year and an estimate by the county assessor of future taxes. In other words, the investor is entitled to reach the inner recesses of the appraiser's mind, and investigate the basis of his opinion. Only thus is an investor competent to exercise an independent judgment. The day has gone by when prudent investors will buy securities with nothing but a blanket opinion of an appraiser. An investor is entitled to know why the property is worth what it is said to be worth.

On the other hand, bond houses owe it to themselves and their patrons to enrich every bond issue with appraisals inviting the faith and confidence of investors in this class of securities. The business of issuing land and leasehold trust certificates, extensive as it has been during the last few years, has only commenced. If this field of investment is not to be discredited, bond houses must take the initiative in securing full and scientific appraisals. Otherwise the state may, in the near future, be expected in self defense, to regulate all such issues, as is, indeed, now recommended by more reputable bond houses.

The menace of these millions of dollars of worthless issues annually issued is becoming so great as to alarm reputable bond houses. Some have even suggested regulation of new issues by commissioners of securities or blue sky departments in the various states.

Arthur Stocks, investment broker of Chicago, urges that such bond issues be limited to 60 per cent of the assessed value of the premises, saying, "If it could be provided by law that **no real estate bond issue should exceed a certain percentage of the value of any property as determined by the tax returns on that property, then—**

1. The placing of unsoundly large bond issue loans on any property would be impossible.
2. Owners of real estate would be compelled to make reasonably just and honest tax returns in order to obtain bond issue loans at all.
3. Real estate bond issues securities would be established and standardized by law and bond buyers would have protection.
4. A tremendous amount of undeclared valuation on real estate would be disclosed. Self interest would compel it. As a result tax rates would favorably react to an increased aggregate of valuations.

Such measure would, doubtless, come under the jurisdiction of the department of securities as a measure for public protection in securities, but it would have far reaching effects as suggested above. A Chicago bank president told the author that such a measure would have immeasurable value to banks and others who marketed real estate bonds, and it would smoke out an unbelievable amount of buried taxes which would result in a more equitable apportionment of the tax burden because, obviously, if A succeeded in evading payment of his just share of public taxes then B, who did not seek to evade such payment, must inevitably pay the taxes of A. And while it would inevitably result in increased taxes for some it would at the same time inevitably result in lowered tax rates for all. The only man who would object would be the tax evader and, of course, his satellite who wished to unload on the bond buying public a lot of unsound securities.

Realizing that the safeguarding of real estate bond issues was becoming an increasingly important matter, the board of directors of The National Association of Real Estate Boards in Chicago in 1927 prepared and broadcast a series of recommendations relative to this matter, urging constituent boards, some 650 in number, embracing a membership of about 26,000 realtors, to give very careful consideration to the adoption of new practices in this field.

The recomenndations were as follows:

(1) No appraiser should accept an order for a valuation for which his employment is contingent upon his appraisal reaching a certain value.

(2) The practice of having one appraiser make the valuation of land and another of the building and using the total of the two as the true value is unsound, and is condemned, as is also the practice of basing the appraisal entirely on the capitalized value of the net income. In appraisals for bond issues where more than one appraiser participates, all of the appraisers estimating the separate units of value, including income, should reconcile their respective appraisals and sign a joint report.

(3) An appraisal report should state the conditions under which the valuation obtains, and should be in detail, upon a standard form furnished by the National Association of Real Estate Boards.

(4) An appraiser should have no interest in the property which is being appraised unless his interest is specifically disclosed in the appraisal report.

(5) An appraisal for a bond issue should in addition to showing the fair cash market value of the property also show the appraiser's estimate of gross earnings, operating expenses and resulting net income. In case the capitalization of the net income and the valuation are not reconciled, the reasons for the difference should be explained.

(6) All advertisements of bond issues should give the name or names and addresses of the appraisers, and should quote sufficiently from the appraisal report, both as to physical value and income, to reflect correctly the opinion and judgment of the appraiser, and certified copies of the full appraisal report should be available to the public at all times.

### GENERAL RECOMMENDATIONS

(1) The proceeds of bonds secured by uncompleted buildings should be segregated for the account and uses of the particular building upon which such bonds are issued, and should be absolutely protected from the general risks of the business of the issuing house.

(2) Payments by the borrower on account of principal, interest and taxes should be segregated for the account of those uses and should be protected from the general risks of the business of the issuing house.

(3) Where the underwriting house, or any person connected therewith, has any financial interest in the building or enterprise securing these bonds except commissions for selling the same, such interest should be disclosed in all advertisements of the bonds and such house or person should not act in any transaction relating to the same as a trustee for the benefit of the bondholders, and in all cases the name and address of the trustee of the bond issue should be given.

(4) The title "first mortgage real estate bonds" should be used only when the bonds are a first lien on both land and buildings.

(5) The title "first mortgage leasehold bonds" should be used where such bondsare a first lien upon the leasehold.

(6) Mortgage houses in issuing statement of appraisals on which they base their issue should specifically state in connection therewith that to the best of their knowledge and belief such appraisals are sound. Any offering of real estate mortgage bonds should clearly state the ratio the loan bears to the appraised value of the property to be mortgaged.

(7) Every real estate bond issue should provide for amortization of the debt to offset depreciation and obsolescence.

(8) Circulars and advertisements should fully, frankly and adequately disclose all pertinent information relative to the issues offered, and should give the name or names and addresses of the appraisers and should quote sufficiently from the appraisal report, both as to physical value and income, to reflect correctly the opinion and judgment of the appraisers, and certified copies of the full appraisal report should be available to the public at all times.

(9) Completion of buildings where there is a bond issue should be adequately guaranteed.

# CHAPTER 21

# EXPERT TESTIMONY

The basis of expert testimony—Who may testify—A realtor is well qualified—Setting up a case in court—General facts necessary to take into consideration in testifying as to a given appraisal.

In legal proceedings testimony is usually confined to knowledge of facts. In certain cases, however, the facts are not inquired into; the witness testifies as to his opinion. Realty values are thus proven in court, for the obvious reason that realty values are based upon expert opinion. Since realty values rest on opinion, the question naturally arises: Who may testify and how is value to be proven? Law books are replete with decisions on this subject.

## WHO MAY TESTIFY

The following questions have been quite definitely settled:

1—Must the witness be, by occupation, a dealer in land? The courts unanimously and sensibly answer this in the negative.

2—Must the witness himself have made a purchase or a sale of land, or a number of them? This is generally answered in the negative. Yet certainly such a personal participation in sales would be a sufficient qualification.

3—Must the witness at least have had knowledge, not merely of general value-rumor or the like, but of specific sales made? This, too, is generally regarded as not essential. But certainly such knowledge of specific sales in the neighborhood is a sufficient qualification.

4—Occasionally all specific limitations or tests are abandoned, and the broad test adopted that "any person having knowledge of" or "acquaintance with" the values may testify: the determination of the qualification thus being left open for each case. This is perhaps the most satisfactory and sensible test, provided the application of it is left entirely to the discretion of the trial judge. But it is doubtful if any court in spite of its proclamation of the broad principle, would consistently enforce it by refusing to multiply rulings based on particular circumstances.

5—A sufficient qualification is usually declared to exist where the witness is a resident, land-owner, or farmer, in the neighborhood. The phrase differs in different jurisdictions and in different rulings of the same court.

6—The knowledge and experience of a public officer—a county commissioner, or an assessor—whose duty it is to become familiar with land values, may also qualify the witness.*

In a New York case it was broadly stated that there is no rule of law, and there can be none, defining how much a witness shall know of property before he can be permitted to give an opinion of its value. He must have some acquaintance with it sufficient to enable him to form some estimate of its value, and then it is for the jury to determine how much weight to attach to such estimate.**

In the case of Town of Union v. J. R. Buchwalter Lumber Co. 101 So. 561, it was held that expert testimony is not essential to establish the value of property. Persons residing near the property, who are familiar with the value of property of like kind and character and with the property in question, the amount thereof, its uses, adaptability, and the improvements, and who have inspected it, may testify as to its value. In an Ohio case, known as Insurance Co. v. Bowersox, 6 O. C. C. 1, it was held that a non-expert well acquainted with it, and its cost, may testify as to its value.

While it is undoubtedly true that anyone may testify having the above qualifications, nevertheless, a realtor who is engaged in the business of buying and selling real estate either for himself or clients is undoubtedly better qualified to testify and his testimony will have more or less weight according to the length of his services and experience in that line. The weight of the testimony is to be judged by the jury. Between witnesses equally credible, and free from interested motives, it will be in proportion to their apparent experience and knowledge of values, and soundness of the reasoning with which conclusions are drawn. That the extent of this knowledge and experience may be known, each is first inquired of upon examination, and afterward subjected to cross-examination, in which further inquiry is then permitted into the particular sales within his knowledge and into all other circumstances and considerations that have been taken into account. Thus opportunity is afforded to the jury of testing the correctness of the conclusions by looking into the truth of the facts, as well as into whether circumstances and considerations have been taken into account which should have been omitted, or others omitted, which should have been taken into account.***

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*"Wigmore on Evidence." (2nd E.) 714.

**1871 Earl v. Bedell V. R. Co., 44 N. Y. 370.

## SETTING UP A CASE IN COURT

The appraiser will make himself a valuable witness and justify his hire if he will prepare his case with intelligence and discretion. If the property is improved, the appraiser should:

1—Secure a photograph of the property in question. He should, too, secure the dimensions and a description of the building. He should know its rentals for a period of years; its cost of maintenance and management. In short, he should make an intensive study of the plant to be appraised.

2—He should not only be familiar with costs, rentals and profits of similar buildings in the neighborhood, but he should reduce these to a standard basis for the purpose of comparison. These also should be photographed if they are of real comparative value.

3—He should familiarize himself with leases, sales, and asking prices of neighborhood property. These should all be reduced to a unit basis for easy comparison.

4—He should check up his information by conversation with parties connected with the transactions, so as to be able to show a freshness of knowledge and authenticity of information that will impress the jury, that he is a man who knows.

5—He should testify to what he actually believes to be value. In other words, his study should be impartial, academic, impersonal and unbiased. He should not stultify himself by testifying to suit the parties, which a skilled attorney can almost always prove to be the case.

6—He should not testify, if the compensation to be paid him does not justify full investigation. Enough poor, undigested, improper and irrelevant testimony will be offered. The real need in appropriation cases is that the witness make a thorough study of the case, be fully fortified for explaining his basis, therefore, be prepared for the most rigid cross-examination and of genuine help to the jury. All this preparation takes time. The skilled and worthwhile appraiser will not testify unless the compensation will justify the fullest preparation, which is necessary no matter how well qualified he may be.

A large mortgage company has formulated a list of general facts which it tries to ascertain in all appraisals made for loan purposes. The list is so complete that it may well be repeated in full:

1—Value placed thereon by the owner.

2—Value placed thereon by the seller.

3—Value placed thereon by real estate experts.

4—Information in possession of title companies.

5—Volunteered information given to the assessor by persons alleging certain information on the subject.

6—So-called "City Services," of which the real estate has the benefit.

7—The amount and character of traffic in front of or near same.

8—The nearness of the real estate to trolley lines, railroad stations, etc.

9—The character of the neighborhood in which the real estate is located.

10—Recent or contemplated improvements in the neighborhood.

11—Whether or not undesirable elements are present in the neighborhood.

12—The grade of the land. How this fits into the city plan.

13—Whether or not the real estate is a corner property. If not, whether it has access to two streets, one in front and one in rear.

14—The previous assessment of the property and surrounding properties.

15—The amounts loaned on mortgages in the neighborhood.

16—Valuations as sworn to in petitions in the Probate Court or Court of Common Pleas.

17—Valuations placed on similar property in condemnation proceedings.

18—Valuations set forth as required by law in sworn statements made by corporations as to the real estate owned by them.

19—The amount loaned on mortgages secured by one particular piece of property or surrounding pieces by financial institutions allowed to lend only on certain fixed percentages of real value.

20—Amounts offered in good faith for the surrounding properties.

21—Whether or not the surrounding properties are rented, occupied by owners or empty.

22—Character and cost of construction of buildings erected on the property.

23—Information as to the value of surrounding buildings in possession of the fire underwriters.

24—Value placed upon land and buildings by builders and contractors.

25—Probable cost of construction of the buildings by cubic feet.

26—Probable cost of construction of the buildings by the square feet of floor space.

27—Whether or not possible uses of the buildings are suitable to the neighborhood in which they are located.

28—Whether or not the property is of such character and so situated as to be practically necessary to the municipality or to some company or individual other than the owner.

29—Testimony given to the board of revision on appeals.

An appraiser in possession of the information above set forth is unusually well equipped and qualified to testify or advise.

A very important element for an expert to consider, in some cases, is the percentage of vacancies. An appraiser having to establish a value in the future, for example, under a re-appraisal lease, would do well to keep tab of not only the number of vacancies, but also the percentage of store vacancies to the number of stores. While, for example, within a certain block or on a certain street there may be 25 vacancies today and in a few years 50 vacancies, the latter may actually be a smaller percentage of the number of stores existing.

The number of stores available may be reduced through absorption for larger uses, such as apartment or residential or public parks, so that a smaller number of vacancies may prove in fact to be a larger percent of the available stores.

The frightful abuses to which expert testimony has been put heretofore, varying perhaps 4, 5, and 6 to 1, was recognized by the National Association of Real Estate Boards at its 1927 session in Miami, Florida, where it recommended a bill for securing unbiased testimony in court action affecting real estate. Such a bill was passed in the spring of 1927 by the Ohio Legislative Assembly. It provides that a judge in a civil action shall have civil power to appoint expert witnesses to give testimony in such matters as real estate valuation. Such summoning of witnesses by the court does not preclude either party to the action from using other expert witnesses at the trial. This will undoubtedly have the effect of insuring a higher class of expert testimony in cases involving the valuation of real estate, as testimony will presumably be more unbiased and involve a judicial examination of the issues involved.

## CHAPTER 22

# LEGAL DECISIONS REGARDING APPRAISALS

What is real estate and what is value?—Significance of terms—Many legal opinions regarding problems involved in the appraising of land—Factors of value—Notice of assessments.

American courts have frequently been called upon to judicially determine the following questions: What is real estate? What is its value? What are the evidences of value? What conditions must be considered in fixing a value? While some of these cases arise under eminent domain, and others under public utility rate fixing laws, by far the greater number arise under taxation laws. The up-to-date appraiser should be conversant with the trend of some of these decisions, otherwise his appraisals will fail as not conforming to the law of the land. A few such cases are presented herewith.

## "REAL ESTATE"—SIGNIFICANCE OF THE TERM

The term "property in lands" is not confined to title in fee but is sufficiently comprehensive to include an usufructuary interest whether it be a leasehold or mere right of possession. Several persons may have interests in a property which is subject to taxation. It is not perceived that the fact that the property of the government is exempt from taxation affects the right to tax the interest which private individuals have acquired in the same property. Exemption from taxation is a privilege of the government, not an incident to the property. State v. Moore, 12 Cal. 56 (p. 137). See also Loring v. Melendy, 11 O. S. 355; also Bank of Kentucky v. Roosa, et al., 13 O. S. 335. "The term 'lands' when not restricted in meaning by related provisions includes all interests therein." Zumstein v. Coal & Mining Company, 54 O. S. 271.

### Leaseholds are Not Taxable

All interests in land should be merged in one assessment of the entire estate as against the owner of the fee. San Pedro, Los Angeles & Salt Lake Railroad Company v. City of Los Angeles, 167 Cal. 425; People v. Shearer, 30 Cal. 645; People v.

Frisbie, 31 Cal. 146; People v. Black Diamond Coal Company, 37 Cal. 54; Los Angeles v. Los Angeles Water Works, 49 Cal. 638; San Francisco v. McGinn, 67 Cal. 110; Bakersfield Oil Company v. Kern County, 144 Cal. 148; Graciosa Oil Company v. Santa Barbara, 155 Cal. 140.

### Pipe Lines Part of Real Estate

Wells, pumping machinery and pipe lines together with such lands constitute real estate within the definition of that term as used in the Revenue Act. The ownership or right to the possession of land on all such property should be assessed and taxed as real estate. California Domestic Water Company v. County of Los Angeles, 10 Cal. App. 185.

### Mineral Rights

A Washington assessor in assessing the lands of a railroad company included a large amount as representing the value of coal underlying the lands. The company claimed that while there was coal in the lands, it was valueless because it could not be successfully mined, and showed that while large amounts had been expended in the locality in attempting to mine the coal, very few ventures were successful and most of the operations had been abandoned. The court held that while the coal could not be profitably mined at the present time, it had a taxable value. It found, however, that the values placed upon the coal by the assessors were excessive, and therefore reduced the assessments to $10 per acre. Northern Pacific Railway Company v. Pierce County, Washington, 220 Pac. 826.

### Mineral Rights—Royalty

The Kentucky court held that where the owner of land had segregated the minerals under it, by granting the mineral rights to another and retaining a royalty interest therein, the royalty interest was assessable as a separate item of property, distinct from the land itself out of which it arose. Commonwealth v. Garret, 260 S. W. 379. Section 5560 of the General Code of Ohio requires a separate listing and valuation of the respective interests above referred to.

### Canal as "Improvement on Land"

The Louisiana court held that a canal dug by a taxpayer on his own land, used to float logs from his forest to his saw-mill and for no other purpose and not open to the public, was not assessable separately from the land, since it was an improvement on the land and a part thereof. Albert Hanson Lumber Company v. Board of State Affairs, 98 So. 552.

### Mill Property—Water Power

A Massachusetts case holds that water power connected with mill property was not a distinct item of property but was properly considered as affecting the value of the mill property, of which it was a part and that the amount and cost of the steam power saved by the use of water power was a factor which might have been considered in estimating its value. Town of Westport v. County Commissioners, 141 N. E. 591.

### Dam—Water Rights

In assessing the dam of a company, assessors described it as a "privileged water right and dam." The company resisted the assessment, claiming that its water power which was not taxable was, in fact, assessed and that the assessment was unequal. The assessment was upheld, the court holding that the term "privilege water right" did not mean water power but the site by the dam which was taxable, and that inequality was not proven merely by showing that fourteen other parcels on the roll were assessed at fifty per cent of full value and without comparing such assessments with the assessment in question. Shawmut Mfg. Co. v. Inhabitants of Benton, 122 Atl. 49.

### Standing Timber

The Wisconsin court held that where one person owned the fee to the land and another the standing timber, both the land and the timber were properly assessed to the owner of the fee, since the statutes clearly contemplated the assessment of land, the improvements thereon, and all rights and privileges thereto as a unit. Schmidt v. Town of Almon, 194 N. W. 168.

## EVIDENCE OF VALUE

### Costs as Value—Actual Value—How to Prove

The general rule in appropriation cases is to ascertain the market value of the land, it being in most cases the best criterion of its value to the owner, but in getting at the value of the property it is always proper to ascertain the value of the land separately and the amount paid for improvements made upon it and the value that the improvements add to it if there is no market value for such improvements. Foote v. Ry. Company, 21 O. C. C. 319.

If a witness as to the value of land is on cross examination asked as to particular sales in the vicinity at a very low figure, he may on re-direct be asked if he knows as to other particular sales at a higher figure. Ry. v. Senning, 17 O. C. C. 649. To prove the value of land, opinions but not actual sales are to be put in evidence. Ry. v. Garrard, 8 Dec. Rep. 389 (Ohio).

Cost is not the equivalent of value; testimony as to cost is admissible only as a guide to actual worth and to test the knowledge or bias of the witness. Cincinnati v. Eversman, 4 O. L. R. 140. This Ohio case also holds that "similar sales" are admissible in chief, but they must be shown by direct evidence of sales of property in the immediate vincity, made voluntarily and within a reasonable time before the hearing.

### Federal Revenue Stamps as Evidence of Overvaluation Inadmissible

In resisting an assessment of his real estate as excessive, a Rhode Island taxpayer showed that his sworn statement filed with the assessors included a value based upon the cost of the property to him plus the cost of subsequent improvements. It appeared that the property had been upon the market for ten years and that the taxpayer had purchased it shortly before the assessment was made. Evidence as to four sales of similar property nearby was given by brokers who negotiated the transactions and it was sought to prove the consideration involved in other sales, by showing the amount of federal revenue stamps attached to the deeds. The court held that the evidence was sufficient to justify a reduction in the assessment of the amount claimed. It also held that evidence purporting to show the consideration involved in certain sales by reference to the federal revenue stamps used was inadmissible. Aspegren v. Tax Assessors of City of Newport, 125 Atl. 213.

### Public Sale—Evidence of Market Value

A Pennsylvania taxpayer resisted an assessment of her land, claiming over-valuation. The property consisted of coal lands that she had purchased from her father at a public sale, her bid being the highest. The sale had been extensively advertised and there was no evidence that it was not bona fide. The court held the assessment excessive, on the ground that the market value at the public sale was the legally recognized basis under the statute for determining the assessable value of real estate and that the sale, in the absence of bad faith, established such market value. Appeal of Kaemmerling, 127 Atl. 439.

### Inability to Sell at Public Auction—As Evidence of Value

In a proceeding to review the assessment of Pennsylvania coal lands, on the ground of over-valuation, the court held that testimony of mining engineers acquainted with the property and with similar property in the vicinity was competent to prove market value; that although there were no sales upon which such engineers might base their judgment, testimony to the effect that the property had been put up for public sale on two occasions after due advertisement at a specified sum, without drawing a purchaser, furnished some indication of market value. Appeal by Pennsylvania Company for Insurance on Lives and Granting Annuities, 127 Atl. 441.

### Dam—Submerged Land—Method of Valuation

The City of New York brought suit against assessors of a town in New York State, contending that a dam owned by it and used in its water supply system was embraced within the term "aqueducts" and was therefore exempt from taxation, under the provisions of the city charter, and further contended that if the dam was to be assessed, the land flooded by the impounded water was valueless, and should be assessed at only a nominal value. The court denied this contention and held that the land was properly assessed at the value it would have had in its natural condition at the date of the assessment as determined by the value of other land in the vicinity. People v. Keeler, 199 N. Y. Supp. 327.

## FACTORS OF VALUE

### Market Value—What Is?

Generally speaking, the value appropriated is the market value. This will frequently be found to be specifically provided for in the appropriation statutes of each state. Frequently the value to be appropriated is defined by law. In other cases, no particular value is mentioned and no definition given. In such cases the "market value" is appropriated.

By "market value" is meant the fair and reasonable cash price which could be obtained in the open market, not at forced sales or under peculiar circumstances, but at voluntary sales as between persons who are not under any compulsion or pressure of circumstances, and who are free to act; or, in other words, as between one who wants to sell and is not compelled to do so, and one who desires to purchase and is not obliged to do so. The value is that for any and all uses, present and potential, the value not only to the buyer but to the seller and the public.

The market value of real estate, or of anything else, is only to be determined from sales. Only buyers and sellers can establish a market, but the sales themselves are not put in evidence, only opinions of value based upon such sales. The reason is that sales at different times, and of different parcels, involve details of comparison which it requires experience to make, and the result of which must be left to be testified as the conclusion of the mind of the witness; in other words, the opinion.

### Market Value—Residential Property

Certain owners of real property in a city in New York attacked an assessment for over-valuation and inequality. The court, in passing upon the case, held that the assessment of residential property for taxation should be based primarily on its market value, which is ordinarily measured by the price which may be obtained after a reasonable and ample time for sale, such as would usually be taken by an owner; that the elements determining the market value were dependent largely upon the facts and circumstances surrounding the particular case, and the exercise of good judgment. People ex rel Sebring v. Dowd, 200 N. Y. Supp. 500.

### Mineral Rights

In assessing certain Pennsylvania coal lands, the assessors obtained the assistance of three experts, and used the lowest valuation determined by them, after an inspection of the lands, which was based upon an estimated value of the coal in place. The assessment was resisted by the owners who placed in evidence the testimony of experts as to the actual market value of the lands, based upon sales in the locality, which was considerably less than the assessment. The court reduced the assessment to the amount claimed by the owners. It held that the settled law of the state required land to be assessed for what it would bring at a fair public sale and that scientific formula, arithmetical deductions and mental contemplations, no matter how desirable they might be, had little value; that such methods might be resorted to only in the absence of market value; that where market value was shown by reliable evidence, it must control. In re Kemble's Estate, 124 Atl. 694.

### Evidence of Cost Admissible

The New York court held that in determining valuation for the purpose of taxation, where a property had no market value, or so limited a market that the customary testimony of market price was not available, evidence of the cost of reproduction, less depreciation, was admissible, though not conclusive. People ex rel New York Dock Company v. Cantor et al; Same v. Goldfogle, 203 N. Y. Supp. 424. Foote v. Railway Company, 21 O. C. C. 319.

### Market Value Supercedes Reproduction Cost

In a proceeding by the State of Alabama to assess the property of a realty company the court held that on an appeal as to the valuation of theatre property evidence of the reproduction cost of the building was inadmissible where the building was used for commercial, gainful purposes and had a market value. Commercial Realty Company v. State, 96 So. 906.

### Speculative Value Should Not Control

In assessing certain unimproved lands located in a Washington municipality, the assessors took into consideration the use to which such lands might be put by way of plotting them and selling them as small tracts at large prices. The assessors claimed that the dominant value of the lands was that based on the use to which they were capable of being devoted. The court held that under the statutes, land was required to be assessed at its fair market value at the time of making of the assessment, which did not mean that the assessor could place a value upon it which was purely speculative, and that while there might be a possibility of great value in the indefinite future, the weight of the evidence indicated that the present value was one-quarter of that found by the assessor. Finch v. Grays, Harbor County, 209 Pac. 833.

The important point about this case is that the assessors assessed the property at its highest possible use, viz., for plotted lands. The owner evidently wanted this assessed as it was being used, rather than what it would sell for. If this is good law, then lands used in suburban villages for farm purposes should not be assessed at what the property will sell for but according to the use made.

### Net Income a Factor in Fixing Value of Oil Lands

A California assessor in fixing the assessment of certain oil lands estimated the net income derived from their total oil and gas production for the preceding year, and capitalized the same at 10 per cent. To the result he added a nominal amount for the surface value of the land and a certain amount for the structural value of the wells, and reduced the total to a 40 per cent basis. The assessment was resisted as arbitrary and unequal, but was sustained, the court holding that the assessor did not adopt such a method of valuation as was out of relation to the factors which ordinarily enter into a fair consideration of the value of such property and that the assessment was not discriminatory and unjust, when compared with other similar property. Birch v. Orange County, 210 Pac. 57.

There is no justification in using the income of the property as a basis for assessment. Gibbs v. State Board of Taxes and Assessments (1921) Ct. of Er. and App. N. Y., 129 Atl. 189. But rentals must be considered. See People ex rel Szerlip v. Goldfogle, 192 N. Y. Supp. 210.

### Value to Owner Not the Criterion

Certain marsh lands in Washington were used by a gun club as a hunting preserve and in assessing such lands the assessor based his valuation on the value of the use to which the property was being put. The court held that such basis of valuation was fundamentally wrong, and restrained the collection of the tax; that in arriving at the value of property the use for which the property was adapted might be taken into consideration, but that this was a different thing from actually estimating the value of the use which was being made of the property. Samish Gun Club v. Skagit County, 204 Pac. 181.

### Golf Property to be Valued as Farm Lands

In the case of State ex rel Oshkosh Country Club v. Petrick, Town Clerk, where it was held that the value of a country club for taxation purposes was not the value to it and was rather the value of adjacent property used for farming purposes. (It should be mentioned in this connection, however, that the court found that it is a matter of common knowledge that there is no sale for a golf course in or adjacent to a city the size of Oshkosh. The central feature of this case was the question whether money expended in a club in improving property for golf purposes could be taken into consideration in valuing the same for purposes of taxation.) 178 N. W. 251.

### Intrinsic Value Supercedes Selling Value

In 76 N. J. 42, case of Turnley v. City of Elizabeth, it was decided that the selling price and not the cost price is the criterion in the valuation of real property. On the other hand in State ex rel Northwestern Mutual Life Insurance Company v. Weiher et al, 188 N. W. 598, it was decided in the Supreme Court that an office building is assessable on its intrinsic value when in excess of its selling value. In this case the court held that a large office building having an intrinsic value in excess of the sum it would sell for because built for a specific purpose can only be valued at its sale value. To the same effect the opinion of the court in a case of Massachusetts General Hospital v. Inhabitants of Belmont, decided in the Supreme Judicial Court of Massachusetts, reported in 124 N. E. R. 21, where the court held that the value of realty to complainants over and above its value to any other owner was not to be considered in fixing its fair cash value for taxation purposes. See In Re Potlach Timber Company, 199 N. Y., where it was held that the present selling price of similar buildings in the same locality is the criterion of value in the eyes of a purchaser, and not the intrinsic worth of the building to the owner or occupant. But see State ex rel v. Halliday, 61 O. S. 352, to contray effect, viz., that value to owner controls when over the market value.

### All Factors of Value Must Be Considered

In the foregoing cases courts have considered various elements of value. Value is based on original cost or present cost, value based on reproduction less depreciation, going concern value or value in liquidation, etc. Various rules and formulas have been laid down by the courts establishing the different kinds of value, such as market, cash, true, reproduction, etc. It is questionable, however, whether value may, in any case, be deducted from any given formula. In the Georgia Railway case, the Supreme Court, quoting from the Minnesota Rate Cases, 230 U. S. 352, said: "The ascertainment of that value is not controlled by artificial rules. It is not a matter of formulas, but there must be reasonable judgment having its basis in a proper consideration of all relevant facts." This thought has been expressed so repeatedly by our highest court that it must be accepted as a guide until there appears a definite repudiation.

What are the relevant facts to be considered? With the exception of one element, the accepted legal guide is found in Smyth v. Ames, 169 U. S. 466, where it was said: "And in order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there could not be other matters to be regarded in estimating the value of a property."

In the matter of the estate of Arthur Jones, deceased, a proceeding for establishing the value of shares of stock in a close corporation for inheritance tax matters, the Probate Court of Cuyahoga County, Ohio, held that it would be necessary to consider the following elements in determining such a value: First, general business conditions prevalent at the time of the death; second, the ease or stringency of the money market; third, the public demand for stocks of like character; fourth, the earning power of a company over a series of years; fifth, dividends paid over a period of years; sixth, admissions of the decedent, if there were any, as to the value of the stock; seventh, the loss to the company, if any, due to the death of the decedent because of his active position in the company; eighth, the fact of a minority interest in the stock. The financial statements of the corporation covering a period of several years prior to the death of the decedent should also be considered. A complete statement of the net gains and losses for a similar period, should be given due weight. Clearly, evidence of none of the above points should be excluded.

While the foregoing case pertains to the determination of a value of shares of stock the same rules and principles would seem to apply in fixing the value of the shares of a real estate corporation. Indeed, it is questionable whether any assessment of real estate for tax purposes could not be challenged in case the assessor should admit a failure to consider any factor of value in arriving at a conclusion. See also Chew v. Grieve, 13 O. N. P. R. 358, in which the court urged that the true value in money of a newspaper must be arrived at by ascertaining the good will and earning capacity and every other fact or circumstance bearing on the question of value, and this ruling is applicable "notwithstanding the property may have attained large earning capacity by reason of the ability and skill of its individual managers, and its earnings might be greatly diminished were the management changed."

In State ex rel, etc. v. Halliday, 61 O. S. 352, it was a question of valuing a telephone receiver which was valued by the company at $3.42, but which had an annual earning value of $14 per instrument. The usual ruling that property is worth what it will sell for in the market was not adhered to, the court holding that the value to the owner controlled where there was no selling value. In this case, the court says "The conscientious officer will avail himself of every avenue that leads to information which bears on the question. No fact or circumstance having such bearing will be disregarded. That the income-producing capacity of an article is an important factor in determining its value is so obvious as to seem beyond the bounds of controversy. This doctrine was sanctioned in its application in State v. Jones, Auditor, 51 O. S. 513: and in Express Company v. Ohio 166 U. S. 220, and no reason is perceived nor has any been assigned why a principle so plain and just should not be applied universally to all species of property.

### Factors in Valuing Public Utilities

To the same effect are the decisions in regard to the valuation of railroads, viz., that all factors of value must be considered. In the case of Chicago & N. W. Ry. Co. v. Eveland et al., Tax Commission of Dakota, Circuit Court of Appeals, Eighth Circuit (May 28, 1926) the court said: "There is no doubt that neither the net revenue of an operated railroad, nor the current market value of its stocks and bonds, nor any other class of competent evidence is the sole criterion by which the value of railroad property for purposes of taxation must be determined. But there are some classes of evidence upon this subject that under the established rules of law and evidence and in reason are entitled to far greater influence in determining such value than others. After a thoughtful reading and deliberate consideration of all the evidence regarding the fair value of the property of the plaintiff in South Dakota assessable by the defendant tax commission in the light of the established rules of law and evidence, to which reference has now been made, we are unable to resist the conclusion that the tax commission of South Dakota and the court below in their consideration of the evidence and in their finding of the value of the property of the plaintiff in South Dakota fell into a decisive error of law in that they failed to give to the fact that the plaintiff derived no substantial net earnings from this property in South Dakota in 1921, or in any of the four previous years, and to the market value of the stocks and bonds of the plaintiff, the decisive influence in determining the value of the property under consideration to which they were entitled."

## NOTICE OF ASSESSMENT

### Notice Must Be Given By Assessor of Increase

A Tennessee assessor assessed certain property and subsequently a county board of equalization raised the assessment without notice to the property owner, although the statutes required such notice. The property owner paid the tax under protest a few days after it was delinquent and when his personal property was subject to seizure, and brought suit to recover such tax. The court held that the assessment was unlawful because of the failure to give notice of the increase and that the payment of the tax under protest was not voluntary but made under duress. St. Louis Basket Box Company v. Lauderdale County, 241 S. W. 99. See also City of El Paso v. Howze, 248 S. W. 99.

### Notice Not Necessary

A county board of tax assessors in Georgia increased the valuation returned for taxation by an individual without giving him any previous notice. The taxpayer brought suit, contending that the tax equalization act was unconstitutional. The court observed that the tax equalization act provided for a hearing and an arbitration before the tax became irrevocably fixed, and held that as the taxpayer had not asked for an arbitration, he could not complain of a want of a due process of law, and therefore upheld the constitutionality of the act in question. It also held the other exceptions were likewise without merit. McGregor v. Hogan, 112 S. E. 471.

### Notice Not Necessary if Taxpayer Has a Remedy

The impossibility of the State Tax Commission giving notice to each property owner before it acts with reference to valuations on different classes of property in the different taxing districts is very apparent. Moreover, the fact that provision has been made by the general assembly in the enactment of Section 12075, General Code, by which suit may be instituted in the common pleas court to enjoin the collection of illegal taxes assessed against any taxpayer, fulfills the constitutional requirement of due process of law in the assessment and collection of taxes. Davidson v. New Orleans, 96 U. S. 97; State ex rel v. Jones, Auditor, 51 O. S. 492, 516; The C. & E. Railroad Company v. Keith et al., 67 O. S. 279, 292. Tax Commission may increase aggregate value of a taxing district without notice. Hammond County Treasurer v. Winder, Receiver, 100 O. S. 433.

### Increase Without Notice

Where the statute requires notice to be given a taxpayer when a board increases the assessment of his property over that fixed by the assessor and such notice is not given, this alone does not warrant relief by way of injunction against collection of the tax to the extent of the increase in the assessment. The taxpayer must still show in addition that the assessment is excessive. So held by the Indiana Court in Schlosser Bros. v. Huff, 128 N. E. 452.

### Horizontal Increase—Notice Not Necessary

Authorities are uniform that where a board in the exercise of statutory powers acts not upon the property assessments of individuals or particular taxpayers, but upon the aggregate assessments of various classes in the several taxing districts as units, notice is not required to be given to individual property owners who may be affected by the action of the board in increasing the valuation of all the property or the property of a particular class in the taxing district. Hubbard v. Goss, Treasurer, 157 Ind. 485; Bi-Metallic Investment Company v. State Board of Equalization of Colorado, 239 U. S. 441; Spalding, Tax Collector, v. Hill, 86 Ky. 656.

### Notice of Addition by Auditor or Board of Revision

The auditor or board of revision may not increase a tax return without notice or opportunity for hearing. A county board raised an assessment and gave notice thereof, and under the statutes, arbitrators were appointed. They failed to agree, whereupon the assessment became, under the statutes, final. A taxpayer obtained an injunction, which was vacated by the supreme court of the state. Upon writ of error the United States Supreme Court held that the statute was void as not allowing the taxpayer notice and denying the process. The court held that in assessment proceedings before the tax becomes irrevocably fixed, the taxpayer must have opportunity to be heard, of which he must have notice. 210 U. S. 385; 237 U. S. 413; that in this case no such opportunity was given before the assessment became final and hence there was a denial of due process within the ruling in Central of Georgia v. Wright, 207 U. S. 147, and kindred cases. The court held that the injunction against collection of the tax should have been granted. Turner v. Wade, 254 U. S. 64.

## PRESUMPTION OF CORRECT ASSESSMENT

In the absence of fraud on the part of an assessor, his method of arriving at the valuation of property is a matter committed entirely to his determination. Kern River Company v. County of Los Angeles, 164 Cal. 751; citing San Jose Gas Company v. January, 57 Cal. 614; Los Angeles v. Western Union Company, 161 Cal. 206. Distinguishing Los Angeles Gas and Electric Company v. County of Los Angeles, 162 Cal. 185.

Court cannot, except where there is fraud or mistake, go into the matter of an assessment being excessive and arbitrary, provided the method pursued in making the assessment is that prescribed by law, and the thing assessed is the thing which is required to be assessed. Miller & Lux, Inc., v. Richardson, 182 Cal. 115. Wagoner v. Loomis, 37 O. S. 571. Stanton v. Tax Commission, 114 O. S. 682.

Courts have uniformly upheld assessments unless there was fraud in its conception. The conclusion of assessing officers as to the value of property for purposes of taxation, when honestly arrived at and when not made in pursuance of some fixed rule or general system the result of which is necessarily discriminatory and inequitable, is conclusive in the courts, however erroneous the conclusions of those officers may be." Los Angeles Gas and Electric Company v. January, 57 Cal. 614; Henne v. County of Los Angeles, 129 Cal. 297.

An assessor is required to exercise his best judgment in determining the value of property to be assessed and the presumption is that his official duty has been regularly performed. Ballerino v. Mason, 83 Cal. 447.

### Presumption of Correctness May Be Overcome

In a proceeding to review an assessment of real estate in New York it was shown that adjoining real estate was assessed lower than the real estate in question. There was a wide difference between the value submitted by the experts for the taxpayer and the city, and such difference appears to have been due to the failure of taxpayers' experts to consider the rents of the property in question. The court sustained the assessment on the ground that the taxpayer had failed to overcome the presumption of its correctness. It held that it was not sufficient to show merely that adjoining property was assessed lower than the property in question. People ex rel Szerlip v. Goldfogle, 192 N. Y. Supp. 210.

### Excessive Valuation Not a Presumption of Fraud

An excessive valuation is not by itself alone evidence of fraud, and any inference of presumption of fraud arising from merely excessive valuation is repelled by proof that the valuation was arrived at by a proper method. City of Los Angeles v. Western Union Oil Co., 161 Cal. 204; distinguishing Postal Telegraph Cable Company v. Dalton, 119 Cal. 604.

The assessment of property for the purpose of taxation is a function of the executive department of the government; and the judiciary has no power or jurisdiction to inquire as to the actual value of property for the purpose of taxation, in order to determine whether there has been a misrepresentation of its value. Clunie v. Siebe, 112 Cal. 593.

## RELIEF—REMEDY FROM EXCESSIVE VALUATION

### Complainants Must Exhaust Administrative Remedy

Where county commissioners have fully complied with the provisions of Section 1214 G. C. (Ohio) in fixing assessments upon land owners for the improvement of an inter-county highway, and given notice thereof as required by that section, and have not otherwise exceeded their statutory authority, a land owner may not enjoin the collection of the assessment under authority of Section 12,075 G. C. when he has failed to file objections thereto with the county commissioners as required by the former section. The provisions of Section 1214 G. C. giving the owner the right to file such objections, and authorizing the board of county commissioners to change assessments so as to make the same just and equitable, furnish the owner an adequate remedy at law, which, if the proceedings are otherwise legal, he must pursue before resorting to a court of equity for relief. See also Columbia Savings Bank v. County of Los Angeles, 137 Cal. 467.

A party seeking relief from an alleged illegal and unjust taxation value must first exhaust all his legal remedies before resorting to a court of equity; and where the law provides the tribunal to which he can appeal for relief such as a board of complaints, state tax commission, or board of revision, he must avail himself of such opportunity before he can be heard in a court of equity. Helmer v. McCarthy, 6 Ohio App. 423; 28 O. C. A. 396; Hammond, Treasurer, v. Windner, 112 O. S. 158. Before one can be entitled to invoke the aid of a court of equity by the extraordinary remedy of injunction, something more than an irregularity, or illegality in procedure, or arbitrary official action, must be shown. There must be a wrong, an injustice or an irreparable injury for which the law provides no adequate remedy; otherwise no relief can be granted. Helmer v. McCarthy, 6 Ohio App. 423.

### Taxpayer Must Be Active

The Colorado court held that where a taxpayer failed to apply to the tax commission and board of equalization from a horizontal increase in assessment, and remained inactive long after the tax was levied, he was not entitled to recover the taxes claimed to be excessive and paid by him under protest. Union National Bank of Greeley v. Board of Commissioners of Weld County, 225 Pac. 851. Hammond, Treas., v. Windner, Supra.

## CHAPTER 23

## APPRAISALS UNDER SINGLE TAX

A query and an answer—What would happen under a single tax system—Endless difficulties involved in dissipating capital values—What experts in land economics believe—Economic rents would increase rather than diminish—A problem and its answer—Residential property would become a drug on the market—All taxes tend to depress land values—What John Locke said in 1692.

Recently a letter was received from an ardent student of taxation theory and an adherent of single tax, as follows:

> "For several years I have earnestly studied and advocated single tax. I believe in theory that it is invulnerable. There can be no question that a system of taxation of land values according to benefits is far better than our hodge podge system of taxing labor, income, industry, consumption, expenditure, etc., etc. But I am at a loss to understand the administrative side of such a tax. If all taxes, national, state, county and local taxes, are to be levied on the capital value of land, there will remain no capital value to assess. A tax rate of at least $15.00 per $100 of present assessed value would be necessary. But this would absorb more than the present economic rent of land since the tax rate is now approximately $2.50 per $100 of value and the capital value represents a capitalization of 6 per cent earnings thereon, total net earnings 8.50 per cent on the capital value. If the government then levies a 15 per cent rate, it will more than absorb the present economic rent. If the government absorbs more than the economic rent, first, What value will inhere in the ownership of land? and second, Will the capital method of assessment not become a real estate earnings tax with all of its difficulties of estimating and determining the rental without sales to guide it? and third, Are our cities equipped with sufficient expert office-holders to administer such a system when manifestly they are now incompetent to assess property at its capital value with an active, even feverish, capital value market?
>
> "Single Taxer."

This suggests a controversy that would fill volumes. A number of moot questions and disputed answers arise. It is perhaps true, that a tax rate of $15 per $100 present valuation would be necessary to collect all local, county, state and proper proportion of federal taxes. If such a rate should be applied to the present economic rent, it would apparently leave no residue for the title-holder of land and therefore there would remain no capital value for such owner. The economic rent may be regarded as the rental paid for present or potential use, and in general represents aprpoximately 6 per cent of the capital or salable value, when the latter is not inflated by speculation.

In our large and growing cities the economic rent is much less in business districts than 6 per cent on the sales value. If, therefore, the entire economic rent is absorbed, nothing would remain for determination but a rental value, not to the owner but to the state. The earnings available to competitors for the use of a given site would be determined either by competitive bids, whenever an application for the use of a vacant lot were submitted, or in the case of an improved lot, when the lease ran out, or when some other person applied for its use. It is probably true that the administration of such a system, unaided and unguided by sales, would involve far greater difficulties than appraisers now encounter. In letting property for use or for renewed use, questions of solvency or insolvency of bidders would arise, questions of repair, the desirability of the particular kind of business proposed in the particular locality, the upkeep and maintenance of the structure, insurance, repair and decoration, and remedies for failure to perform, which the state at present is little equipped to perform efficiently and well. An opportunity for graft and corruption, incomparable in magnitude with any exercise of any present function of state would arise. Despotic power would be necessary to regulate, for better or worse, our present land tenure and land taxation system. The state would attempt to function where hundreds, even thousands, of landlords now perform.

Professor Richard T. Ely in his "Land Policies" indicates some of the political difficulties in administering the leasehold system of land tenure, under which we would probably operate under a system of single tax. He says:

"Politically considered, the leasehold seems to be an impossibility under a democratic government. Suppose we had started with a leasehold system in the United States? We would have had the land users working politically to secure full private ownership as they did in New Zealand, where they voted for the party that promised to turn the leaseholds into freeholds."

"Of course, this is the logical outcome. The leasehold is something not workable when government is under popular control. There are illustrations of this in American history. Two Ohio universities — Miami University at Oxford and Ohio University at Athens—started with splendid endowments of land from the federal government, which were granted, however, subject to the control of the state legislature. In both cases a leasehold system was established allowing for revaluation and increase of rents at definite periods. In both cases laws were secured from the legislature doing away with the revaluation provisions and virtually converting the leaseholds into freeholds. As a result Ohio University has an income of only $4,200 a year from 44,000 acres of land, and in the fiscal year 1919-1920 Miami University received $6,955.56 from 24,403 acres. In the latter case the lands were free from state taxes, which, if assessed, would have reached a larger figure than the rents that were paid."

"Even when the government made leases of land on a credit system from 1800 to 1820, it was difficult to collect the deferred payments, and political activity secured the passage of one relief act after another, extending time of payments, remitting interest, allowing relinquishment of the part unpaid for and retention of an amount of land covered by the payments already made."

"If all our public land had been disposed of under a leasehold system, it would have been impossible to maintain that system with the public as landlord, for the people would have brought pressure to bear to secure full freehold property, and that pressure would have prevailed.

"In New Zealand also, Siegfried (in his book Democracy in New Zealand) says, 'Democracy has triumphed over socialism so far as the land is concerned. The man who owns land wants to feel that he has no superior over him. He recognizes that he has to pay

> taxes and does not complain about that; nor does he generally complain because they are working toward a limitation of holding—400 acres as a maximum holding of the best land. But he does want to know that whatever land he has is his'."

The foregoing sets forth the political difficulties if the economic rent is entirely absorbed and taken by the state, which our most prominent single taxers contend for as the principal and ideal purpose of their propaganda.

It is not so certain, however, that the entire economic rent would be taken so far as the present tax burden in the United States is concerned. It must be remembered that land enjoys all social, economic and political benefits. It is the barometer of civilization. If this country has continued peace, land value increases and becomes stabilized. Indeed, only enduring and permanent income may be capitalized. When society is well organized into self-sufficient and contented units, the ownership of land enjoys higher values. When economies are effected in government, when the country enjoys cheap transportation, cheap gas, cheap electricity, proximity to markets, better police, fire protection, cheap telephone and telegraph systems, in short, when there is greater economy and efficiency in public as well as in private life—this will all tend to increase land values.

John B. Sharpe in his "The New Political Economy" sets forth this principle in the following:

> "I would have you see also, that all those efforts for social amelioration, so excellent in themselves, such as the promotion of temperance, the purification of politics, greater efficiency in moral and religious instruction, the heightening of the civic sense and the political judgment, every aspiration indeed for what is high and better, every impulse towards what is good and noble that finds organized expression in society, serves but to increase the rental value of land without increasing the wages of labor. Imagine, if you please, a community in which all the citizens were honest, temperate and industrious; in which vice and indolence and immorality were no longer to be found! Would it not be deemed a most desirable place to live, and would not many persons eagerly seek homes in such a community in order that they might enjoy the peace and security and all the

> good influences that would abound? But what would be the economic effect of all this? Is it not clear that it would find expression in increased rent, that those who owned the land in such a community would charge a premium for the use of it? Manifestly they would. And since this increased price would have to be paid by the laborer out of his earnings, it becomes apparent that the economic effect of such reforms is not to increase wages, lighten toil and mitigate want, but to increase the value of land."

Professor Richard T. Ely says in his "Costs and Income in Land Utilization":

> "It was long ago observed by Cicero that peace and tranquility increases the selling value of land. . . . The moral character of the population is seen in thrift, self-control, foresight, also in land values. . . . Increasing wealth, though it may not increase the demand for land, may add to the selling value of land, other things being equal, because it makes the waiting for future incomes easier."

So the benefits of a better and cheaper taxation system would undoubtedly result in higher benefits and rewards in the use of land. Present economic rents would therefore increase rather than diminish. It is easily understood that communities realizing, say, one-third of their taxes from land, one-third from buildings and one-third from personal property, would under single tax enjoy in the use of land a geater benefit with the last two tax burdens lifted. These other taxes would be capitalized into greater land values. Likewise the national import, income and internal revenues and consumption taxes—immunity therefrom would involve relief, immediately increasing the value of the residuary legatee, namely, land values. This would mean increased rents to be paid by the user. Only thus in greater economic, commercial and industrial activity could be expected an offset to the effacing of present land values, now low because industry and capital is hampered by exhausting tax burdens. Where the burden is now greatest, land values are most depressed. The release of such industry and capital in localities where the burden is now greatest would involve the greatest increase of land values. In the battle of higher rates versus greater economic benefits, land values might still be sufficient to retain their present expression of value, the capital value. Any absorption of the economic rent short of entire confiscation would still result in speculation of land ownership. If no value is left, if the entire economic rent is absorbed, the administration of the resultant tax system based on rentals which the merchant or home owner "could afford to pay" would be fraught with dire and devastating consequences, comparable only with the late Russian socialistic debacle.

Try a formula, for example. Let it be assumed that the economic rent of a tract of land today is $750. The tax rate is $2.50 per $100 and the market rate of money is 5 per cent and the assessment at 100 per cent. It has been shown elsewhere herein that under existing economic conditions the value would be $10,000. The formula would be—$750 is 7.5 per cent of what number? Let us also assume that there is raised in the community from the building on the premises $750 in taxes and from the merchant on his stock of goods also $750 and from the latter two a national tax of $2250. Now as this $3750 tax ($1500 local and $2250 national) is released, the land ownership would profit and land values increase. How much, nobody knows. If, however, the $3750 would inure to the benefit of land ownership only to the extent of 50 per cent of the released tax, a capitalization of the economic rent at 5 per cent would result in a largely increased value. To the former economic rent of $750, add $1875 (one-half of $1500 local tax and $2250 federal tax), making $2325 economic rent. The formula then would be $2325 divided by 20 per cent (5 per cent interest and 15 per cent tax rate) equals $11,625. In other words, the land has not depreciated, if economic rent appreciates by one-half of the liberated tax. If it will appreciate by only one-quarter of the liberated tax, a capital value of $8435 will still remain. It is highly probable that the capital value would increase by more than the liberated tax.

While the above illustrations are applied to a single parcel, the proportion of various taxes will hold true as to the combined values of a city, where the rates are approximately proportionate. It will make a greater or less difference to property highly or poorly improved as between owners. The more highly a property is improved, the greater it would profit. In the case of vacant land, it is believed that it would soon be improved at least by a "taxpayer" as a $15 tax rate on $100 of assessment would soon eat up the capital value. There would thus be two major and counteracting movements, a higher tax rate consuming the capital value and, on the other hand, better economic conditions tending towards increased rentals, resulting in higher capital values.

As to residential property, it probably would become a drug on the market. Vacant land paying $15 per $100 of assessed value would soon eat itself up, so that large quantities of such land would be thrown upon the market. Only that in use would pay rent. It is possible that the effect of such large quantities of vacant land would so reduce the value of adjacent or business property as to reduce the capital value of the property much below the estimates noted.

The above presentation of single tax administrative conditions may be somewhat crude. It is subject to certain modifications as to whether it applies to a locality only or whether the tax is state-wide or nation-wide; whether there is free trade with foreign countries; whether capital between nations is thoroughly liquid and whether immigration of labor is restricted.

The doctrine herein presented that all taxes tend to depress land values and conversely that a liberation therefrom will tend to increase them is not as novel as it appears. As early as 1692, the noted English philosopher, John Locke, wrote:

> "It is in vain, in a country whose great fund is Land, to hope to lay the public charge of the government on anything else, there at last it will terminate. The merchant (do what you can) will not bear it; the laborer cannot, and therefore the land owner must; and whether it were best to do it, by laying it directly where it will last settle, or by letting it come to him by the sinking of his rents, which when they are once fallen, every one knows are not easily raised again, let him consider."

In 1734 Jacob Vanderlint contended that the abolition of existing taxes would inure to the land owner by increasing its value. He urged that:

> "Prices of commodities, when freed from taxation, either will remain the same or will fall. If they remain the same—assuming also that there has been no change in the money supply—the cost of production will decrease, because of the abolition of the tax on the producers. The difference between cost and price, however, is rent. Hence, the only result will be to increase the rent of the land owner. On the other hand, if the prices fall, demand will increase. But, since all commodities, in last resort, come from the land, this increased demand means higher rent. Thus, from either point of view, remission of taxes redounds to the welfare of the landlord. In other words, the burden of all taxes is on the land."

Vanderlint accordingly proposed a single tax on land, as at once far cheaper and far better than the existing complicated and inconvenient taxes, which after all, in his opinion, finally fall on land.

The immediate effect of certain taxes is perfectly plain. It is plain that:

1—A tax on the farmer's product depresses the value of his farm;

2—A tax on the merchandise of merchants and the product of manufacturers depresses the value of the land occupied;

3—A tax on a mortgage depresses the value of lands;

4—A tax on money depresses land values in general;

5—A tax on a residence depresses the value of the site;

6—A tax on stocks and bonds depresses the value of the underlying securities;

7—A tax on public utilities affects the value of sites served by them.

But it is not so easy to observe the direct effect of a particular sales tax on real estate in general. And yet a tax on sales of a merchant, or obversely, on the expenditures of the buyer, raises the prices in general, reducing the consumer's purchasing power, sterilizes commerce and industry and thus reduces the rental paying power of the tenant, which rental paying power is the barometer and controls the rental which a landlord may demand and which is capitalizable into land values.

There are many points of uncertainty and confusion in a field hitherto little developed. It is hoped that a stimulus will be offered for a wider and more intensive discussion of the economic and administrative effects of a single tax on land values.

# CHAPTER 24

# SENSING THE MARKET

Analyzing available data for use by appraiser—Surveying the real estate market—Maintaining a schedule of store vacancies—How apartment vacancies may be recorded—"Weighing" the real estate market—Evidences of the trend of business—Analyzing "for sale" and "for rent" advertisements—Noting the number of transfers and conveyances in a city—Keeping track of real estate foreclosures—The relation of realty growth as determined by population—Recording the building permits and contracts—Keeping in touch with building costs.

Appraising of real property involves an estimate of future earnings, which in turn involves consideration of future economic, political and social conditions.

Henry Babcock, in his excellent work, "The Appraisal of Real Estate," says: "It is clear that both potential buyer and potential seller are interested in the present value of the future utility. They are dealing with probabilities and not certainties. The appraiser's opinion of value is a composite of these values which go to make up a market."

The captain of industry in fixing prices of his commodity to be delivered in the future calls to his aid surveys by the national government and innumerable market experts, many of whom enjoy subscriptions to their market reports running into hundreds of thousands of dollars annually. Such market reports, based largely upon the United States Survey, published weekly and monthly, attempt to prognosticate prices through a consideration of many lines of activity.

The federal government survey collates and submits, for example, the average monthly and yearly production of staple articles on an index basis, including the wholesale index of food, shelter and clothing. The prices of industrial and railroad stocks, of bank clearings, the commercial paper interest rate, imports, exports, bond prices, reserves of the Federal Reserve, etc., are shown. This detailed Survey casts every possible ray of light as to future conditions. The sales of mail order houses, of prominent chain stores, and of department stores are scheduled as a basis for comparison month by month and year by year. Prices are analyzed not only as to wholesale values but also as to production values. Car loadings and available car supplies are also items of consideration. All of these figures are placed on an index basis, forming interesting and easily comprehensible comparisons where quantity figures might mystify or confuse.

So, therefore, it is necessary for the wide-awake appraiser to sense the realty market. The up-to-date realty man must be ready to argue from facts and figures why realty values in general will go up or down. Exceptions there will always be to the rule. Local conditions may vary in general effect, but general conditions or tendencies must be known, for these work silently and inexorably. The prospective buyer is but partially informed, so the realtor should be ready to supply the omitted factors, and offer a comprehensive viewpoint.

Consider, by way of example, a few of the surveys needed in every city to intelligently sense the real estate market. Data should be collected either by a realty board, or some outstanding realty organization, of the tendency of vacancies. It should be known whether they are increasing or decreasing. The realtor finds a prospective tenant arguing, perhaps, that a certain thoroughfare, or block, is "going dead." How can this be argued away? Only by facts, by actual count, by empirical information, by scientific study.

In some cities a number of agencies semi-annually tabulate the number of retail store vacancies not only on the various main avenues, but also by blocks or sections of each thoroughfare. At the same time the number of available store units must also be enumerated, for it is evident that a greater number of vacancies might possibly indicate a favorable condition if the available number of stores had largely increased. In such a survey, then, it is necessary to ascertain the proportion of vacancies in each block or section, on each thoroughfare and on each side of the street. In such calculations it is necessary to indicate store vacancies and available store spaces on some unit or standard basis, such as sixteen or twenty feet, or any other unit which may seem more closely to correspond to prevailing usage. Thus, when a new store unit of sixty feet frontage is built, and is occupied by one company or continues vacant, it should be counted as three separate units.

The percentage of vacancies of each street may be compared with the percentage on other streets, the increase or decrease in available space noted and an intelligent comparison of the per cent of vacancies of present space with the available space in former years may be made. In short, a picture of growth, inactivity or even decay is sketched in broad lines which will readily and effectively combat blind prejudice or snapshot judgment. Such a survey should be made at fixed periods, such as January 1 and July 1 of each year.

While the foregoing pertains to store rentals, apartment house vacancy surveys can easily be made by taking a certain number of typical apartment buildings, the number depending on the size of a city. By investigating the same buildings from year to year the number and proportion of vacancies can readily be discovered at fixed times of the year. If to this is added the amount of rental, or average rental, further valuable information is available. The United States Department of Labor, Bureau of Labor Statistics, attempts to supply monthly figures on the cost of housing in its "Cost of Living" report, published monthly in the "Survey of Current Business" by the United States Department of Commerce. The commissioner of labor statistics reports that the cost of housing index is based on records secured by agents of the department visiting real estate and rental agencies in various cities, the number depending on the size of each city and running from 250 to 2000 dwellings in the respective cities. A list of houses and amounts at which they are rented is secured, the same identical buildings, houses or apartments being used for each tabulation.

In some cities the real estate market is "weighed" by the number of for rent ads under various classifications such as apartments, furnished apartments, private houses, etc. The United States Department of Commerce in its monthly "Survey of Current Business" recognizes the importance of rental advertisements as business barometers by reporting the number of rental advertisements in certain cities. That the total amount of newspaper advertising in the United States somewhat reflects the trend of business is evident from the fact that the aforesaid survey gives in terms of thousands of lines the national advertising newspapers devote to sales of automobiles, automobile accessories, cigars and cigarettes, financial, food, hotels, household furniture, men's clothing, musical instruments, toilet articles, and other commodities of general consumption.

Other evidences of the trend of business recognized by the United States government in the preparation of its data from a national standpoint, but which should also be locally prepared and distributed, is the volume of postal business, the number and value of money orders issued, the number of new policies of life insurance written but segregated as to ordinary and industrial insurance, the number of persons employed, expressed both in terms of thousands and also in terms of index numbers, electric power production, the number of passengers carried by electric railways, operating revenue of telephone companies, and deposits in commercial and savings banks. All these trends of business movements are important to the realtor and appraiser. They should possess such data. It is not beyond the stretch of the imagination to assume that real estate boards will consider it one of their primary functions to keep all of their members fully informed as such evidence to the end that they may represent more intelligently the clients whom they seek to serve.

Some realtors watch and tabulate the amount of space from month to month and week to week devoted in a given paper to for sale ads of private residences, apartment buildings, office buildings, industrial and subdivision property or other classifications. Such collated information is valuable in showing tendencies and frequently refutes impromptu judgments based on inadequate information.

A factor to be stressed in the realty as in the industrial and mercantile markets is the prevailing rate of interest, for an enlarged or diminished supply of credit definitely affects the value of real estate. If money and credit is getting cheaper, prices of real estate must rise. On the other hand, when the rate increases, securities as well as properties will be thrown on the market in increased number and amount and depress realty prices. The price of call money has, perhaps, little to do with the price of securities and property. The price of long-time demands, public securities, and the best collateral is the safest and most available evidence where mortgage prices are not in sufficient quantity to produce a market.

Another very valuable indication as to the tendency of the market is the number of real estate transfers and conveyances in each city. The National Association of Real Estate Boards has for years been performing a valuable service in collating information from forty-one typical cities of real estate transfers. These include fee transfers, mortgage and lease instruments, as well as land contract records and perhaps other documentary transfers. Where the inclusion of so many documents is found to be burdensome, collation of the number of realty transfers by way of deed only will be found a splendid indication of the activity of the real estate market, for the number of mortgages and leases approximate very closely the curve indicated by the number of deed transfers.

The monthly average of transfers and conveyances recorded in forty-one typical cities is taken as a standard by the National Association of Real Estate Boards, all transfers for each month of the years 1916-1923 being taken as a norm, or 100 per cent. Thus it found the index record for the twelve months, May, 1926-May, 1927, to be as follows: May, 1926, 163 per cent; June, 1926, 175 per cent; July, 1926, 176 per cent; August, 1926, 169 per cent; September, 1926, 164 per cent; October, 1926, 160 per cent; November, 1926, 160 per cent; December, 1926, 155 per cent; January, 1927, 170 per cent; February, 1927, 180 per cent; March, 1927, 173 per cent; April, 1927, 166 per cent; May, 1927, 156 per cent.

This index shows the method of application. It is a national picture, it is true. However, a similar graph of Cuyahoga County, Ohio, containing four cities, forty-four villages and eleven townships, of the number of real estate transfers bears a very close relationship to the above national picture, and strongly indicates the potency of general or national phenomena as to local values. Of course, local causes may temporarily deflect universal causes or tendencies, but where this is the case the judgment and reason and logic of the local appraiser may explain such variation.

Another factor tending to show the condition of the real estate market is the matter of real estate foreclosures. In times when real estate values are increasing there are few foreclosures, while on a declining market foreclosures increase very rapidly. It has been the custom in some offices, public and private, to keep tab monthly, and by years, of the number of foreclosures and the amounts, as well as the sums for which the specific properties sold in the aggregate. It may also be advisable to note the totals involved in these foreclosures from month to month and year to year.

Realtors need no suggestion for keeping in touch with the growth or decline of population. In fact, this index is constantly before the public, as newspapers constantly watch and report this factor. As the United States census is taken decennially, local communities lack authentic information as to whether the city is growing or declining in the interim. Under such circumstances telephone directories, address directories and school enumeration of youth, street car passengers carried, and gas and electric connections are frequently resorted to to show the increase or decline, as the case may be, of a city's population.

Occasionally it is stated that growth in population is an uncertain factor in affecting land value. This, in and of itself, is true. There is no direct relationship, since evidence is not wanting during and after the Great War of the phenomena of diminished population and increased values. There are, of course, many local as well as national causes which affect land values. But the fact remains that all other things being equal, there is no special reason to doubt that the future will develop in the same measure as it has in the past. It may be safely asserted that a prospective growth or decline in population of a given community will affect land values accordingly. The population factor is merely one factor. It may even be a minor factor, which indeed was proven to be the case immediately after the Great War when many cities declined in population while the deflated dollar caused a rapid development of real and personal property values.

Another important element of historical and appraisal worth is the number and amount of building permits and building contracts. Figures of this kind are collated periodically by prominent building organizations as tending to show the development of the city. It is, of course, important to analyze building permits and to classify them so as to be able to differentiate between semi-public and private building activities. For example, the building of a church or social hall may be of value morally and socially and yet be of slight economic worth. The United States government gives figures in thousands of square feet of the numbers of buildings with contracts awarded in each of the following cases: Commercial, industrial, residential, educational and other public and semi-public buildings. It also gives in terms of thousands of dollars the contracts awarded covering the same classes of buildings. To show the thoroughness with which these figures are prepared may also be noted the fact that the amount of fire losses in dollars is presented by months, it being evident that to the extent fire losses are repaired no growth may be imputed.

Building statistic figures must, of course, be critically examined. It is possible that in some cities building permits are used somewhat as a basis for assessment and accordingly estimates submitted with the building inspector's department may be exceedingly low. On the other hand, even though these figures are not used by the assessor they may be unduly padded by prospective mortgagors or builders who seek credit from banks on the basis of other public building costs. These tendencies may offset themselves in the aggregate in a large number of cities and towns. Locally, however, it is necessary to weigh the influences that work on these building permit values from time to time.

Related to the question of building permits is, of course, building costs. While the United States Department of Commerce in its monthly "Survey of Current Business" gives monthly as well as annually an index of building materials, of building costs as prepared by the "Engineering News Record" of frame and brick buildings, these should be understood as being national and subject to wide changes locally. It should be the function of an up-to-date real estate board to know the varying changes of costs of similar classes or types of buildings.

Compiling such data may seem herculean, and may involve a wide departure from the present activities of realty organizations. The treasury of many may not permit the assumption of such added duties. These suggestions are, nevertheless, offered as showing the possibilities. The performance of even a few of these functions will pay largely increased dividends to progressive realty boards.

# BUILDING APPRAISALS

# CHAPTER 25

# BUILDING APPRAISALS

Factors involved—Cost of housing in large American cities—Brick prices at different points—Square and cubic foot costs in building.

In appraising buildings no factors are possible for universal application. It must be borne in mind that there is a difference of 25 to 50 per cent in the cost of the same character of structure in one town or village as compared with a large city. There may be a 50 per cent difference in the cost of the same structure in a given city. The labor factor and its efficiency constitutes a very substantial part of the cost of the structure. Generally speaking, it will be found that building costs increase with the size of the city.

How variant the cost of buildings in large cities must be is reflected by the increases in the cost of housing reported by the Department of Labor, as follows:

### COST OF HOUSING IN LARGE CITIES

Per Cent of Increase From December, 1914, to December, 1926

| | |
|---|---|
| Baltimore | 70.6 |
| Boston | 53.5 |
| Buffalo | 77.4 |
| Chicago | 96.7 |
| Cleveland | 71.8 |
| Detroit | 95.5 |
| Houston | 32.6 |
| Jacksonville | 69.9 |
| Los Angeles | 61.7 |
| Mobile | 40.5 |
| New York | 70.2 |
| Norfolk | 49.2 |
| Philadelphia | 77.3 |
| Portland, Me. | 23.8 |
| Portland, Oreg. | 33.5 |

| | |
|---|---|
| San Francisco | 39.5 |
| Savannah | 38.1 |
| Seattle | 60.3 |
| Washington | 37.4 |

Per Cent of Increase From December, 1917, to December, 1926

| | |
|---|---|
| Atlanta | 42.1 |
| Birmingham | 65.8 |
| Cincinnati | 55.9 |
| Denver | 65.5 |
| Indianapolis | 36.5 |
| Kansas City | 34.1 |
| Memphis | 53.9 |
| Minneapolis | 36.1 |
| New Orlenas | 56.2 |
| Pittsburgh | 75.0 |
| Richmond | 36.0 |
| St. Louis | 83.2 |
| Scranton | 72.4 |
| Average U. S. | 64.2 |

From the foregoing, it appears, for example, that the increased cost of housing in June, 1926, over December, 1914, was 53.2 per cent in Boston, 99.5 per cent in Chicago, 71.6 per cent in Cleveland, 95.5 per cent in Detroit, 66.6 per cent in Jacksonville, 67.4 per cent in Los Angeles, 69.5 per cent in New York, 39.6 per cent in San Francisco and 37.4 per cent in Washington, D. C. It appears that the increased cost of housing in June, 1926, over December, 1917, was 54.8 per cent for Cincinnati, 36.8 per cent for Minneapolis, 75.4 per cent for Pittsburgh and 84.7 per cent for St. Louis.

While the foregoing figures pertain to the cost of rent, rather than the cost of building, it is believed that the two costs are inter-related. There can be no increased cost of building, generally speaking, without involving increased rents. And vice versa, increased rents represent increased cost of building, at least temporarily.

From the foregoing, it is therefore clearly evident that the cost of building, due to labor and cost of materials, due further to varying industrial conditions, varies greatly in the different cities. This, then, emphasizes the need for local variation of any building cost factors.

A study shows that the price in 1927 of common brick to contractors in the various cities was as follows:

## COMMON BRICK PRICES

### U. S. Commerce Department Reports Wide Variations in Quotations per 1,000 Brick

| | | | | | |
|---|---|---|---|---|---|
| 1. | Chicago | $12.00 | 6. | Buffalo | $16.00 |
| 2. | Los Angeles | 12.50 | 7. | New Orleans | 18.00 |
| 3. | Seattle | 14.00 | 8. | Philadelphia | 20.00 |
| 4. | Pittsburgh | 16.00 | 9. | Scranton | 28.00 |
| 5. | Cleveland | 16.00 | 10. | New London, Conn. | 30.00 |

While Chicago contractors were buying at $12 per 1000 bricks, contractors in New London, Conn., were paying $30, the department discovered. Pittsburgh and Cleveland bought brick for $16, while New Orleans was paying $18, Philadelphia $20 and Scanton $28. Brick are manufactured more cheaply in Chicago and Los Angeles because of clay deposits near those cities, which are particularly well adapted for the rapid burning of brick and, consequently, a lower fuel cost.

Prices of many other building materials vary according to locality although some of them are standardized except for freight charges. Materials constitute about 40 per cent of a building contractor's costs and fluctuation in the price of one or two materials is likely to change largely the final cost of a new building.

Prices of most building materials, in 1927, have been declining, but the labor cost of construction is now generally higher than ever before. The wage rate of building mechanics has more than doubled in the last ten years.

From the foregoing, it is therefore clearly evident that the cost of building, due to labor and material conditions, due further to varying industrial conditions, varies greatly in the different cities. This then emphasizes the need for local variation of any building cost factors.

## SQUARE, OR CUBIC FOOT COSTS

A number of cities use a cubic foot factor for appraising all classes of buildings. This is a mistake. Cubic foot factors may properly be employed in appraising theatres, auditoriums, armories and such industrial buildings having varying floor levels and roof heights, as such buildings lend themselves little to classification. Cubic foot factors should also be used on buildings of great height because if square foot factors were employed a different factor would be necessary for the various story heights. Thus there would be twenty factors for office buildings from one to twenty stories in height. This is too involved, whereas the same cubic foot factor will apply to any height within certain limitations as to size.

Square foot ground floor area factors should be used on dwellings because of the fact that dwelling story heights do not vary greatly and the process of obtaining a square foot area is of course simpler than arriving at the cubage. Ninety-five per cent of residences built are either one, one and a half or two stories in height. Square foot factors allow more elasticity in variation from a standard without resorting to fractions in the factor. For example, in a dwelling which cost $7 per square foot or 20 cents per cubic foot, the cost of a certain additional item provided by the schedule might increase the square foot factor by twenty cents or 3 per cent. If the same additional cost is taken on the cubic foot basis, the cubic foot factor would be increased four-sevenths of a cent. Square foot values should, therefore, be used on buildings which are usually of uniform height.

It should also be said that the cubic foot factor method of calculation of contents is not standardized. Some architects figure inside wall to inside wall, that is, from plaster to plaster; others from outside to outside. As to height, some figure from the basement floor levels to the average or mean roof level. Others estimate from the bottom of the footings to the coping. A recent study of a certain building indicated that the difference between inside area and outside area was over 7 per cent. The variation in the method of calculation might show a spread of 25 per cent.

## CHAPTER 26

# THE NEED FOR CLASSIFIED BUILDING SCHEDULES

> Material costs in different cities—Cost of a building depends on many factors—Condensed tables are necessary and desirable—Size and shape important factors—Prices of brick versus frame construction—Structural depreciation—Three methods used—Probable life of buildings—Opinions of experts.

A number of cities publish as an aid to their assessors condensed tables of costs applicable to general classifications, such as frame residences. For example, very recently a real estate board of one of our foremost cities published the following schedule of costs.

**Costs per Cubic Foot in Cents**

| Residences | Aug. 1915 | Aug. 1920 | Jan. 1921 | Aug. 1921 | April 1922 | Dec. 1922 |
|---|---|---|---|---|---|---|
| Brick | .30½ | .68½ | .48 | .38 | .33 | .45 |
| Brick (Veneer & Stucco) | .24 | .54 | .37 | .30 | .24 | .24½ |
| Frame | .21½ | .48½ | .34 | .37 | .19 | .30½ |

The use of such condensed tables giving absolute figures without toleration or deviation, without stating type or standards, is productive of erroneous and immature appraisals. No condensed schedule of building unit cost factors is of great value because of the unending variety of designs, sizes and quality of materials and workmanship entering into buildings of any given class. For example, to say that a brick residence would cost forty-five cents per cubic foot December 1st, 1922, and that all brick residence costs should be estimated at forty-five cents per cubic foot is an absurdly incorrect assertion.

The cost of a house depends on many factors. To arrive at a proper appraisal, it is necessary to get a description of the building. We must know the size of the house. The smaller the building the higher the factor for the same type. Is it 500 square feet, 1000, 2000, 3000 or more? What kind of roofing materials are used: shingles, slate or tile? Has it furnace heat, vapor, or perhaps stove heat? Has it one, two, three or four bath rooms—tile or wood floors? Has it mahogany wood work or only pine finish? Has it a finished third floor porches or projections, such as bays, dormers, etc.? The variation in cost of highest to lowest type will be over 100 per cent.

Few appraisers recognize the importance of considering the size and shape as affecting the unit cost factor of buildings. The greater the area the lower the relative factor and conversely the smaller the area the higher the factor. Using for example 750 square feet ground floor area as a basis for residence appraisals the increase or decrease of the floor area, with no other changes in its description, will show the following approximate results. For every 20 feet increase in floor area the factor is found to decrease 1 per cent from the standard unit price. For every twenty feet decrease in floor area the factor is found to increase 1 per cent above the standard unit price. In other words if the residence is 1000 feet in area it will be 250 feet greater than the standard, involving a 12½ per cent smaller factor. If the factor is $7.50 for a residence containing 750 square feet, the factor for a 1000 square feet similar type building would involve a 12½ per cent smaller factor, or $6.56 per square foot. These figures will hold good for variations of from 25 to 30 per cent from the standard beyond which the factor must be changed in a lesser degree.

As to the shape of a building it is recognized that the more closely the plan of a building approaches a square the smaller the factor to be employed, for the reason that the amount of exterior wall materials enters into this shape of building to a less degree than any other. For example, take two buildings of similar area, containing 1600 square feet of area. If one was 40 x 40 feet it would mean there would be 160 lineal feet of outside wall material. On the other hand, a building 80 x 20 feet in size containing the same area would have 200 lineal feet of outside wall material or 25 per cent more than in the other case. It may thus be seen that as the shape of a building varies from being square the factor increases. One of the most costly items of construction is the outside walls and as pointed out there are more lineal feet of outside wall in a long narrow building than in a square one. It therefore follows that the size and shape of buildings must be carefully considered by the appraiser in arriving at his estimates.

It will be noticed that the price of a brick residence is given as 30½c in August 1915 and as 45c in December 1922, or a 50 per cent increase. It seems, however, that the United States Department of Labor's index of lumber and material prices was approximately 94 in 1915 and 186 for the last month of 1922, showing a 100 per cent increase. In 1923 the cost of reduplicating 1915 buildings was approximately 90 per cent greater.

Outside of the unreliability of abbreviated tables, the absolute values given should be disputed. For example, the difference between wood and brick dwelling costs is shown as 40 to 50 per cent (brick over frame). The generally accepted increase of cost of brick over frame dwellings is 10 per cent. Why should it be 50 per cent when the roof, basement, frame, windows, plumbing and heating may be identical in both the brick and frame residence?

Similar questions might be raised in the study of other classes of buildings, where a cost per cubic foot is given regardless of the type. For example, consider fireproof hotel buildings. Is there a bath for every guest room? Are there store rooms on the street level? Is the building on an interior lot with only one ornamental facade or does it face two or three streets? An absolute appraisal figure allowing of no elasticity should therefore not be used.

Unless a full description of a building is given, preferably accompanied by a photograph showing the general design and ornamental detail, unit costs cannot be fixed with any degree of accuracy, without considerable classification of type, and size, and modification for deviation from such standards and types. It is desirable to divide one family dwelling into twelve classes for frame and brick structures. In addition modifications for deviation from the standard size should be made. Apartments are divided into nine classes as above. Store buildings are divided into four classes with seventeen sub-classifications. Two family dwellings are divided into four classes and double (side by side) houses are arranged into three classes.

## STRUCTURAL DEPRECIATION

The most perplexing problem in appraising is the subject of depreciation. Almost any business, investment or piece of property can be shown to be a losing venture merely by adopting excessive rates of depreciation. What does one mean by depreciation? Perhaps as good a definition as any is that contained in the regulations of the Bureau of Internal Revenue, namely:

> "The distribution of the cost of an asset over its useful life, taken in such a manner so that, when the useful life of the asset shall have become exhausted, its cost plus addition less salvage value shall have been restored to capital."

The question of additions or salvage value are rarely considered in the valuation of improvements on real estate. This is, probably, because most additions are treated as expense and because after a building has served its useful life additional cost is involved in its destruction and removal rather than securing a salvage value. One is, therefore, primarily concerned with the reproductive cost of the improvement and also its useful life. Its useful life depends, first, upon the probable life of a building from a structural standpoint and, secondly, its usefulness from an esthetic, economic or locality standpoint.

In figuring depreciation, there are four well defined methods in vogue. First, the straight line method of an annual depreciation of a certain equal and annual per cent. Second, the weighting of the rate of depreciation at the beginning of the life of the building. Third, the weighting of the rate of depreciation in the later years of the life of the building. Fourth, the allowance of a yearly and equal depreciation, modified, however, by the profit arising under a sinking fund.

The annual equal percentage method is arrived at by dividing the cost represented at 100 per cent by the probable life of the building. If, for example, the life of the building is estimated at fifty years, then an average annual depreciation is taken at two per cent. The milk in the cocoanut is, of course, the "estimated life." A number of cities in the United States boast of the possession of residences two hundred years old. Numerous residential buildings in Europe are found which were erected three hundred or more years ago. Theatres, churches and monuments built fifteen hundred and two thousand years ago engage the attention of the tourist. With such uncertainty in the physical life of a building, it must be evident that depreciation tables are largely conjectural. The difficulties are further enhanced when it is borne in mind that the different parts of a structure do not depreciate uniformly, such as the basement, roof, floors, walls, plastering, machinery and plumbing.

Moritz Kahn, of The Albert Kahn, Inc., of Detroit, hits straight from the shoulder in discussing the probable life of industrial and commercial buildings in a talk delivered as part of the Detroit University course in building management, in which he says:

> "We are generally told that ordinary frame buildings have a life of from 20 to 30 years; that mill constructed buildings with brick walls have a life of 40 years; that structural steel buildings have a life of from 20 to 40 years, depending upon the locality in which they are built; that encased steel frame buildings with masonry walls and fireproof floors have a life of 50 years; and that reinforced concrete buildings have a life of 50 years. In my opinion, these probable lives are too short and should be doubled, especially in the case of the last two groups of buildings."
>
> "There are many ordinary frame buildings in this city which are already 40 or 50 years old. I recently inspected a group of mill constructed buildings that were 55 years old, and to all appearances they can last another 25 years. America is a comparatively young country. Our buildings have not been in existence long enough to give us proper records of their probable lives. If we wish to have records of old buildings we should go to Europe. Over there it is not unusual to see buildings with masonry walls and wood interiors one, two or three hundred years old. On a recent visit to England I passed through the small town of Stanton in Worcestershire where the last building was constructed some 250 years ago. On my way I passed through the village of

> Broadway, Worcestershire, and stopped at the Lyons Arms, a hostelry which was built in 1627, three hundred years ago. It has been inhabited continuously since it was built, and I can see no reason why it cannot be inhabited for another hundred years. In the Westminster district of London there are streets of buildings, with brick walls and timber interiors, which are today used as offices, although they were originally built for residential purposes. These buildings are one and two hundred years old and are still serviceable. How can we say that in America such buildings have a life of only 40 years? Ours are constructed nearly as well, if not as well, as these European buildings. Why shouldn't ours last as long?"
>
> "If I were asked to prepare a table of the probable life of buildings, I should say that an ordinary frame of timber building, properly maintained, would have a life of 100 years. Steel frame buildings, with masonry walls and fireproof floors (Class "A" structures), would have a life of 200 years. And reinforced concrete buildings would also be given a probable life of 200 years. In any event, it is extremely conservative, when preparing a financial statement, to allow a probable life of 75 years for a Class 'A' building."

The weighting of the rate of depreciation in the initial life of the building, with a resultant diminished annual depreciation later is probably a more logical basis than weighting the depreciation in later years. For example, if the estimated physical life of a residence is fifty years, is the depreciation greater during the first ten years or during the last ten years, between its fortieth and fiftieth years of standing? Whatever may be the answer as to chemical action or physical wear during these respective periods, the fact remains that investors impute a greater difference of value after the first few years than to the latter years. When a building is sold, it immediately becomes a second-hand building just as a piece of furniture or a second-hand automobile, which latter if operated but a day is subject to a heavy depreciation. On the other hand, a buyer rarerly would consider it of any importance whether a building were thirty or thirty-five years of age. The difference would be hardly worth noting. Hence, in tables of physical depreciation, a heavier annual rate is allowed during the initial rather than in its later life.

The fact of the matter is that structural depreciation of well built commercial buildings generally amounts to less than 2 per cent per year and in many cases is a fraction of but 1 per cent. However, obsolescence is a factor which may exceed 2 per cent per year. This latter, however, is largely overcome by replacements, for example, by modernizing the elevators, plumbing and heating plant, the electrical systems, the arrangement of doors and rooms, windows and fronts. Perhaps the best test as to the need for obsolescence change as to an office building, is the price office space brings, in comparison with more modern structures.

# CHAPTER 27

# AMORTIZATION OF DEPRECIATION

Setting up a fund to amortize building costs—Standard tables of depreciation—Capitalization rate an important element—Depreciation set-offs reinvested at different rates of interest, and what they will return—A handy depreciation table—Table of structural depreciation—The building dollar in frame construction — Depreciation problems—Appreciation of buildings—Indexes of construction costs.

Much may be said as to the propriety of setting up an amortization fund in connection with an annual depreciation.

Hundreds of thousands of investors especially in the case of buildings, are utterly at sea as to whether their investment is a profitable or a losing venture. They have only a very hazy and indefinite idea as to whether a given expected income will have extinguished their investment when the building finally becomes valueless. The standard depreciation generally used by investors seems to be 2 to 3 per cent. The federal income tax adminstration permits from 2 to 3 per cent annual depreciation rates for cement or brick buildings and 5 per cent for wooden buildings—a very unscientific discrimination, when it is borne in mind that brick and wooden buildings vary generally only as to the exterior construction, which may constitute 10 to 15 per cent of the total cost of the building.

As a rough-and-ready rule, such general depreciation rates may be permissible. Investors should know, however, that these figures are not scientific, and that they are unnecessarily high and unreliable from an investment standpoint. If, for example, the probable life of a building, not considering possible obsolescence, is 50 years, the ordinary investor will charge off 2 per cent per annum. But if this annual depreciation charge is set aside, invested in interest-bearing deposits at 4 per cent, or investments of stock and bonds at 5 per cent or 6 per cent, and if such annual profit is annually re-invested, the investment is recovered or amortized within a much shorted period than 50 years. If 2 per cent is invested and annually re-invested at 4 per cent, the original investment becomes extinguished in 27½ years. If invested at 5 per cent, it becomes extinguished in 25 years, and if a rate of 6 per cent is secured, it will extinguish the investment in 23.6 years.

The proper annual charge for depreciation in order to finally realize the original investment is dependent, first, upon a proper estimate of the probable life of the building, and second, on the rate of investment and re-investment. Assume different cases, respectively, when the expected life of the building may be 40, 50 or 60 years. If a building has an expected life of 40 years, it having cost $100,000 to construct, it will require:

If re-invested at 4 per cent, an annual depreciation of $1,011.90 or approximately 1 per cent.

If re-invested at 5 per cent, an annual depreciation of $788.40 or approximately .79 per cent.

If re-invested at 6 per cent, an annual depreciation of $609.60 or approximately .61 per cent.

In other words, at 4 per cent invested and re-invested a charge off of $1,011.90 or about 1 per cent will amortize the investment in 40 years (instead of the apparently necessary charge of 2½ per cent). If invested and re-invested at 6 per cent, less than 2/3 of 1 per cent must be set aside annually.

If the building has an expected life of 50 years, it will require,

If re-invested at 4 per cent, an annual charge of $629.80 or approximately .63 per cent.

If re-invested at 5 per cent, an annual charge of $545.90 or approximately .45 per cent.

If re-invested at 6 per cent, an annual charge of $324.90 or approximately .32 per cent.

In other words, if the depreciation charge is invested and re-invested at 4 per cent, a charge off of less than .63 per cent is necessary. It will require reinvested at 6 per cent approximately 1/3 of 1 per cent to be charged off annually.

If the building has an expected life of 60 years, it will require, If re-invested at 4 per cent, an annual charge of $404.00 or approximately .40 per cent.

If re-invested at 5 per cent, an annual charge of $269.40 or approximately .27 per cent.

If re-invested at 6 per cent, an annual charge of $177.00 or approximately .17 per cent.

From the foregoing, if the depreciation set-off is re-invested at 4 per cent, it seems that the investment will be recovered when the building finally becomes valueless by charging off a rate of about 2/5 of 1 per cent, while at 6 per cent about 1/6 of 1 per cent annually re-invested will recoup the investment. So with machinery, 10 per cent annual depreciation will at 4 per cent amortize a $100 outlay in 8.88 years, while if re-invested at 8 per cent, a 10 per cent annual depreciation will amortize a $100 charge in 7.25 years.

Some owners claim that a 2 per cent depreciation charge is not ample, insisting on a 3 per cent depreciation charge. A 3 per cent rate invested at 4 per cent would kill the original charge in 21 years, at 5 per cent in 19.79 years, and at 6 per cent in 18.3 years. When it is borne in mind that many residences have been in use for fifty years and that various office buildings with a very small outlay are in a good state of physical condition and still good producers 20 years after their construction, it is evident that a 3 per cent charge for depreciation is excessive, unless the burden of investment and re-investment is regraded as an unreasonable obligation imposed on an investor. There is certainly no burden and little risk in depositing such depreciation charge with savings banks at 4 per cent. To require an investment at 6 per cent might necessitate some allowance being made by way of insurance for eventual losses in more hazardous investments and in the case of individuals, some allowance for management of the fund. However, when the depreciation is re-invested in a going business by a corporation making 6 per cent, 8 per cent or 10 per cent, management of such fund by an existent and continuing organization should involve no extraordinary added functions. Even if such allowance be made, it is evident that the general notion of a proper depreciation rate must undergo a radical revision. Considered in the light of these conclusions, buildings will show a far greater return than owners themselves realize.

Even though the owning corporation does not set aside an amortization fund but, on the contrary, declares a dividend, the stock-holder may re-invest the dividend and kill the investment in the manner above provided.

Earl Schultz, a president of the National Association of Building Owners and Managers, in an address suggested that 10 per cent of all rental income be laid aside for amortization purposes and to provide a reserve fund for periods when the vacancy is in excess of 10 per cent.

It must be borne in mind that the foregoing amortization method deals with the investor, regardless of what the building may actually be worth to the public. The tables merely show what a very small annual charge of depreciation is necessary in the light of such compensating balances if properly invested, and if such sums are excluded from liquidating dividends.

The following is a handy table which shows the per cent of cost to be annually set aside at varying rates of interest according to the estimated life of the building in order to recoup an original investment:

## AMORTIZATION TABLE

| If the life of the building is estimated at | The percentage of cost of the structure to be invested annually, if invested will amortize the cost. | | | | |
|---|---|---|---|---|---|
| | 3% | 4% | 4½% | 5% | 6% |
| 20 years, invest annually | 3.72 | 3.35 | 3.18 | 3.02 | 2.71 |
| 25 years, " " | 2.74 | 2.4 | 2.24 | 2.09 | 1.82 |
| 30 years, " " | 2.1 | 1.78 | 1.64 | 1.5 | 1.26 |
| 35 years, " " | 1.65 | 1.35 | 1.22 | 1.1 | 0.89 |
| 40 years, " " | 2.32 | 1.05 | 0.93 | 0.82 | 0.64 |
| 45 years, " | 1.07 | 0.82 | 0.72 | 0.62 | 0.47 |
| 50 years, " " | 0.88 | 0.65 | 0.56 | 0.47 | 0.34 |
| 60 years, " " | 0.61 | 0.42 | 0.34 | 0.28 | 0.18 |

For example: Where a building costing $100,000 has a total estimated life of sixty years, if the owner is to realize his $100,000 in sixty years at compound interest at 4 per cent, he must set aside annually forty-two one-hundredths per cent on the $100,000; or $420 each year.

This subject of depreciation is one of the most important features of appraisal work. A difference of 1 per cent, for example, in depreciation of an office building, is enough to make the difference between a very lucrative or losing investment, since 1.05 per cent of a building value (not the building and land value) if set aside and annually invested in 4 per cent in a bank, will reproduce the original value of the building in 40 years.

There is no doubt that conflicting views of proper depreciation, depletion and exhaustion, allowance of excessive rates by the government as to mines, buildings, machinery, personal property, etc., explain the large number of corporations reporting deficits under the federal income tax. The statistics of income of the federal census, for the year 1924, show that corporations reported deficits amounting to $2,223,925,993. On the other hand, these same corporations reported dividends paid (out of such deficit) amounting to approximately $388,000,000, of which $343,832,104 was in cash and $43,705,714 in stock dividends. About 181,000 corporations reported no net income, showing a deficit of $2,223,925.993 and that number represented 43.3 per cent of the total number of corporations. In this connection it is notable that construction corporations reporting net income, paid an income tax, based on the net income, amounting to 10.48 per cent, which is lower than any of the varied kinds of manufacturing, business and financial corporations, with the exception of rubber and rubber goods. The 10.48 per cent of the income which the construction companies paid, is the same per cent that agricultural and related industries bore of their net income.

Aside from the theory, however, of depreciation it is necessary to adopt some table more practical and convenient especially for wholesale assessing. The following table of structural depreciation has had considerable sanction:

## TABLE OF STRUCTURAL DEPRECIATION

**(Obsolescence not included)**

**Annual % Depreciation of Present Day Cost**

| Age—Years | Dwellings and Stores Frame | Dwellings and Stores Brick | Apartments and Hotels Non-Fireproof | Apartments and Hotels Fireproof | Stores and Office Bldgs. Fireproof | Industrial Buildings Fireproof | Industrial Buildings Non-Fireproof |
|---|---|---|---|---|---|---|---|
| 1 | 2 % | 2 % | 3 % | 1½% | 1½% | 1½% | 1½% |
| 2 | 4 | 4 | 6 | 3 | 3 | 3 | 3 |
| 3 | 6 | 6 | 9 | 4½ | 4½ | 4½ | 4½ |
| 4 | 8 | 8 | 12 | 6 | 6 | 6 | 6 |
| 5 | 10 | 10 | 15 | 7½ | 7½ | 7½ | 7½ |
| 6 | 12 | 11½ | 17½ | 9 | 9 | 9 | 9 |
| 7 | 14 | 13 | 20 | 10½ | 10 | 10½ | 10½ |
| 8 | 16 | 14½ | 22½ | 12 | 11 | 12 | 12 |
| 9 | 18 | 16 | 25 | 13½ | 12 | 13½ | 13½ |
| 10 | 20 | 17½ | 27½ | 15 | 13 | 15 | 15 |
| 11 | 21½ | 19 | 30 | 16½ | 14 | 16 | 16½ |
| 12 | 23 | 20 | 32 | 18 | 15 | 17 | 18 |
| 13 | 24½ | 21 | 34 | 19½ | 16 | 18 | 19½ |
| 14 | 26 | 22 | 36 | 21 | 17 | 19 | 21 |
| 15 | 27½ | 23 | 38 | 22½ | 18 | 20 | 22½ |
| 20 | 33 | 28 | 48 | 30 | 23 | 25 | 30 |
| 25 | 38 | 33 | 55½ | 37½ | 28 | 30 | 37½ |
| 30 | 43 | 38 | 63 | 45 | 33 | 35 | 45 |
| 35 | 48 | 43 | 70½ | 52½ | 38 | 40 | 52½ |
| 40 | 53 | 48 | 75 | 60 | 43 | 45 | 60 |
| 45 | 58 | 53 | 80 | 67½ | 48 | 50 | 67½ |
| 50 | 63 | 58 | 80 | 75 | 53 | 55 | 75 |

It is believed that any building utilizable for its original purposes is worth at least 20 per cent of its cost of reduplication, and therefore no greater structural (not obsolescent) depreciation than 80 per cent should ever be given.

The above represents allowable structural depreciation for a building in an ordinary state of repair. A building may be in an excedingly bad state of repair, requiring an additional allowance.

It will be noted that the foregoing table relates to structural depreciation only. Tables combining structural with obsolescent depreciation are of little or no value, for manifestly buildings in general, even of the same class, do not become obsolete in a uniform manner, and more assuredly are not equally obsolescent after a given number of years. Obsolescence is largely individual or, at best, local.

It will also be noted that the table is classified as to time, as to material, and as to use, viz., apartment hotels, office and industrial. This distinction is necessary since an industrial building though fireproof will depreciate far differently from apartments. In a report of the Joint Committee on Valuation of the Ohio Public Utilities, objection is made to the straight line method, as well as to the sinking fund method, the committee urging the use of an actual inspection method. Referring to the straight line and sinking fund methods, it says:

> "Both of these methods make use of life tables showing average length of life of similar units. Often these tables do not represent exhaustive studies of any great number of units. Furthermore, unless the life tables are compiled with reference to conditions similar to those surrounding the operation of the unit in question, they are practically worthless as a basis for estimating the length of life of a unit. Frequently such tables are averages taken from records of units operating under widely diverse conditions; hence they give no index to the depreciation of a unit working under definite circumstances. Moreover, these tables are based upon studies of units installed many years ago, and operated under conditions prevailing during that period, which are necessarily different from conditions under which similar units are operated today, or will be operated in the future."
>
> "Moreover, such life tables are open to objection, because they necessarily fail to accurately measure:
>
> 1. The wear and tear which has actually taken place on the unit in question.
> 2. The standard of maintenance employed.
>    Widely varying standards of maintenance will be

adopted in different plants, and it is impossible to give proper consideration to these variations in the preparation of life tables.

3. The elements of inadequacy.
   Since a life table is an average and is not made with reference to any given community, it can furnish no guide to any influence which the element of inadequacy from natural causes or from municipal regulations may have upon the date of replacement of the unit.

4. The element of obsolescence.
   Any effect which this element may have upon the total depreciation is much more nearly ascertainable by the appraiser at the time of making the valuation in the light of the state of the art at that particular time than by the use of any life tables.

"The objections which have been urged against estimating depreciation by any of the theoretical methods are met by the use of the actual inspection method. Here the depreciation is determined through actual inspection by an appraiser, and the application of his judgment, verified by such tests as may be practicable. By the inspection method, due allowance is made for the actual wear and tear and the standard of maintenance employed. It is the consensus of opinion that this method affords the fairest measure of depreciation that can be applied to a property.

It is frequently urged that a frame dwelling should be much more rapidly depreciated than a masonry dwelling. This is not advisable. The construction of the foundation and roofing, heating, plumbing, plastering, hardware, lighting fixtures and interior woodwork is the same in both, the only difference being that the frame dwelling has siding or shingles in the side walls, while the other has masonry construction for its walls. In a frame dwelling house of 768 square feet ground floor area, costing, for example, $16,000, the wood studding, siding, sheathing and painting will cost about $1600. In other words, 90 per cent of these two houses are identical in cost and value. This would show that only 10 per cent of the cost of the frame house was entitled to an additional rate of depreciation over the brick house. If a frame house is kept reasonably well painted, it will, probably, last as long as a brick house.

The Common Brick Manufacturers Association of America asserts that the difference in cost is but 5 per cent. In a recently issued pamphlet it claims that a $6000 house built of brick would require but 20,000 brick for the outside walls and that the total cost of the brick at an average price throughout the country would be about $300 or "less than the plumbing would cost."

How various are the opinions as to rates of depreciation and how much self-interest controls such appraisals is evident from the data submitted by a prominent building material association, wherein it suggests a depreciation of one-half per cent per annum for a brick house while it affirms a 3 per cent per annum depreciation to be necessary for a frame house. Of course, if the frame and brick houses are 95 per cent identical in material and cost such a variation must appear absurd. The difference between a brick and frame house will be found to be rather that of maintenance, repairs, insurance, etc.

Cecil C. Evers in his "The Commercial Problem in Building" offers the following table of structural and commercial depreciation:

**Table of Approximate Structural and Commercial Life of Different Classes of Buildings, also Annual Structural and Commercial Depreciation**

| | Structural | | Commercial | |
|---|---|---|---|---|
| Class of Buildings | Life in Years | Per Cent of Average Annual Depreciation | Life in Years | Per Cent of Average Annual Depreciation |
| Cheap detached frame residences.... | 30-40 | 2.90 | 25 | 4. |
| Good detached frame residences...... | 40-60 | 2.10 | 35 | 2.90 |
| Ordinary brick residences............ | 50-75 | 1.65 | 40 | 2.50 |
| Good brick and stone residences....... | 100-150 | .83 | 45 | 2.20 |
| Frame tenements .................. | 25-35 | 3.50 | 27½ | 3.17 |
| Brick tenements and flats ........... | 40-50 | 2.25 | 35 | 2.90 |
| Good class apartment houses......... | 50-75 | 1.66 | 45 | 2.20 |

| | | | | |
|---|---|---|---|---|
| High class fireproof apartment houses | 75-100 | 1.16 | 45 | 2.20 |
| Cheap brick shops and dwellings..... | 40-50 | 2.25 | 40 | 2.50 |
| Ordinary brick shops and dwellings... | 50-75 | 1.66 | 45 | 2.20 |
| Good brick and stone stores and offices | 75-100 | 1.15 | 45 | 2.20 |
| High class offices and stores of brick, stone, terra cotta and iron or steel construction ...................... | 150 | .83 | 50 | 2. |

In frame buildings and the cheaper brick buildings, there is apt to be excessive depreciation over the average in the first year or two, owing to shrinkage and settlement. Special allowances can be made for this where necessary.

It will be noted that Mr. Evers finds the structural life of high class offices to be 150 years, while the commercial life he places at 45 years. Preston M. Nolan of Chicago, emphasizes the necessity of figuring depreciation on the probable commercial, rather than the structural life of buildings. As indicating the necessary obsolescence charge due to changing business conditions, he cites the following Chicago office buildings with their approximate commercial life: "The Chaplain, 15 stories, 21 years old when taken down; The Continental Bank Building, 28 years; The Rand-McNally Building, 28 years; The Trade Building, 15 years; The Royal Insurance Building, 35 years; The Montock Block, 19 years; The Mallers at Quincy and LaSalle, 34 years. Then there was the Old First National Bank Building, the City Hall, and the County Building, all of which the engineer would have shown, had a life of several times that accorded them by Chicago's ruthless and quick-moving spirit of progress. It is easy to prove the intrinsic non-existence of a building. Whenever the net earnings of a properly managed property fall below the accepted rate of return for the land alone, the building has ceased to exist, excepting as an incumbrance on the land."

S. M. Boardman of the Chicago Real Estate Index Co., determined by actual count that the average life of all first buildings on LaSalle Street and Michigan Avenue, now replaced, was 34.5 years. On the other hand, Col. John Reed Kilpatrick of the George A. Fuller Co. of New York City, addressing the American Construction Council meeting on November 8, 1926, on "Permanency in Building Construction," took exception to the oft-repeated statement that the average useful life of a steel frame skyscraper is 27 years. In this address he asserted that with building development controlled by well planned city and zoning ordinances, in so far as construction is concerned, a modern steel frame fireproof building competently planned and honestly erected would render efficient service for 100 years or more.

An interesting table, giving the proportion each kind of work bears to the total building cost and, therefore, showing what proportion of an ordinary house costing from $9000 to $23,000 goes for all carpentry work in the building, was recently prepared by The Copper and Brass Research Association, as follows:

BUILDING DOLLAR IN FRAME CONSTRUCTION

| | Cents is Spent |
|---|---|
| For excavating and grading | 1.8 |
| For masonry | 9.4 |
| For stucco, plaster and tile | 10.6 |
| **For carpentry** | **27.2** |
| For roofing | 5.4 |
| For flashings, downspouts, etc. | .7 |
| For plumbing | 9.3 |
| For heating | 7.0 |
| For electric wiring, etc. | 2.7 |
| For hardware | 2.0 |
| For painting and glazing | 4.5 |
| For screens | .9 |
| Total for construction | 81.5 |
| For landscaping | 3.0 |
| For builder's profit | 9.4 |
| For architect's fee | 4.5 |
| For financing | 1.6 |
| | 100.0 |

These figures, however, apply entirely to frame construction, as do most comparative figures dealing with construction costs. The reason for this is that frame houses are most numerous throughout the country and it is customary with statisticians to base their tables, figures and estimates upon that particular type of construction with which people in general are most familiar.

It will be noted that the entire cost of carpentry, not only the walls, but partitions, floors, windows, etc., is 27 per cent. It takes but a cursory examination to note that more than 25 per cent of construction is identical in both brick and frame construction.

The Cleveland Housing Co. a few years ago, made an analysis of the cost of one hundred five to six room frame dwellings. The analysis was made of the building dollar in percentages going to the respective building trades and was segregated as to the part of each going to labor and material respectively. The table is as follows:

| | Total % | Labor % | Material % |
|---|---|---|---|
| Excavation | 2.3 | 2.3 | |
| Masonry | 13.8 | 5.2 | 8.6 |
| Carpentry | 50.0 | 22.0 | 28.0 |
| Roofing | 1.4 | .6 | .8 |
| Plaster | 6.6 | 4.0 | 2.6 |
| Painting | 4.8 | 3.5 | 1.3 |
| Plumbing | 10.4 | 1.4 | 9.0 |
| Electrical | 1.8 | .4 | 1.4 |
| Heating (Hot Air) | 2.9 | .8 | 2.1 |
| Sheet Metal | 1.3 | .1 | 1.2 |
| Decorating | 1.2 | .2 | 1.0 |
| Miscellaneous | 3.5 | .5 | 3.0 |
| | 100.0 | 41.0 | 59.0 |

In the above table, for example, it is found that in a six room frame dwelling, carpentry cost about 50 per cent of the total cost of the dwelling and that this goes 22 per cent to labor and 28 per cent for material. It is interesting to note that while the part going to labor in the year 1910 was 33 1/3 per cent, and the part going to material was 66 2/3 per cent, in the year 1925 the part going to labor was 41 per cent and the part going to material was 59 per cent. In other words, more of the cost of the house is going to labor, while the material costs less.

Whatever may be any authority's opinion of the proper depreciation rates for the various classes of improvements, the rulings by the federal authorities in administering federal income tax will carry great weight. While the regulations do not set forth any particular rates, nevertheless, a number of departmental rulings seem to justify 5 per cent for frame residences, 3 per cent for apartment houses, 3 per cent for slow-burning brick structures belonging to manufacturers, 2 to 2½ per cent for reinforced concrete buildings and 2 per cent for concrete, brick and steel fire-proof buildings.

The National Machine Tool Builders Association uses these rates: Brick buildings, 3 per cent; frame buildings, 5 per cent.

In the Farmers Grain Co.'s Appeal, 1 B. T. A. 605, the board allowed 5 per cent on grain elevators, and the treasury ruled: A frame building may remain serviceable for a period of 20 to 30 years, while a building of steel, concrete, and stone construction may have a life of 50 to 100 years.

In Bulletin "F", page 7, in Howely's Appeal, 2 B. T. A. 1099, the board allowed higher rates than were allowed by the commissioner and lower than claimed by taxpayer, on frame buildings in California subject to excessive heat. Frame cottage and tenant houses, 5 per cent; residence 6 2/3 per cent to 7¾ per cent.*

In the case of an apartment house a jury found that 3 per cent was a proper rate of depreciation. Cohen v. Lowe, 234 Fed. 474. This was the rate allowed by the government, while the plaintiff claimed 5 per cent. The apartment house was situated at No. 320 West 84th Street, New York, a very desirable location.

If, however, a change in the character of a neighborhood or other causes results in an ascertainable loss, the claim for depreciation would probably be correspondingly increased.

A recognized authority ("Depreciation of Buildings," by Frank Lord, president, Cross & Brown Co., New York City) on real estate buildings emphasizes the need for special study of each particular case. The life of a building is dependent upon many factors. It is necessary to take into consideration: first, the design of the building and of its foundations; second, the type as adapted to its locality and purpose; third, its construction and material; fourth, its operation and maintenance. When it is impossible to obtain definite information along these lines, this authority states that "we must be content to accept the method generally adopted of taking 3 per cent for brick and stone and 4 per cent for frame buildings."

In C. R. McCauley Co.'s Appeal, 1 B. T. A. 937 (A), the taxpayer fixed a value of $140,000 on a four story reinforced concrete building on March 1, 1913, and claimed 3 per cent depreciation. The commissioner reduced the value to $70,000 and allowed 2 per cent. The board overruled the commissioner's valuation and allowed the taxpayer's, but sustained the 2 per cent rate.

In Roshek's Appeal, 2 B. T. A. 260 (A), taxpayer claimed four per cent on brick business building, finished inside with steel and wood, erected on leased land, lessor to purchase building at end of lease at salvage value. The commissioner reduced the rate to 3½ per cent and was upheld by board. The taxpayer claimed eight per cent on an old building purchased with an estimated remaining life of 12½ years. The commissioner reduced the rate to three per cent and was overruled by the board.

A concrete building 75 x 250 feet, the walls of which were only six inches thick, standing upon a sandy foundation in close proximity to the main line of a railroad, where traffic was heavy and the constant movement of trains caused vibrations both of the soil foundation and of the building, was depreciated by a taxpayer at the rate of five per cent per annum. The commissioner reduced the rate to 2½ per cent. The board (in Dickey Groc. Co.'s Appeal, 1 B. T. A. 108 (A), sustained the taxpayer.

In Eckstein's Appeal, 2 B. T. A. 19 (A), three per cent depreciation on two buildings in Chicago of steel and concrete, was allowed by the board. The commissioner's rate (which was not disclosed) was overruled. The board took into consideration traffic congestion which seriously affects retail trade. In Eimer & Amend's Appeal, 2 B. T. A. 603, the commissioner allowed one per cent on two steel and brick buildings erected at 209 East 18th Street, and 202 East 19th Street, New York City, on leased land. The board refused to accept the evidence of the taxpayer and upheld the commissioner.

The Commissioner of Internal Revenue in 1924 approved a depreciation on the building and equipment of the First National Soo-line Building of Minneapolis, at the rate of 2.23 per cent, a composite rate reached by depreciating the equipment such as boilers, elevators, etc., and a standard rate of the building 1.5 per cent.*

## APPRECIATION OF BUILDINGS

Structures sometimes appreciate in value, when, for example, the present day duplication cost less depreciation is found to be greater than the prior original cost.

In speaking of depreciation of buildings, one frequently hears it said that there has been no depreciation of late years, but rather appreciation. This is true, of course, when we seek the present value from a value or cost as of a former date. For example, if we know the value of a building in 1913, knowing the general appreciation of building materials up to 1927, we may calculate the present day cost by adding the per cent increase in general costs. We must then, however, calculate the depreciation in wear and tear. It will make no difference whether we find a building value by taking the present day cost of duplication less depreciation, or on the other hand, whether we take the original cost or a previous date value and add a per cent of general increased costs, deducting therefrom depreciation.

For the benefit of those calculating present value from a former cost or value, the index prices of building construction costs compiled by the United States Department of Commerce and issued in its bulletin "Survey of Current Business," will be of assistance.

### INDEXES OF CONSTRUCTION COSTS

| Year and Month | Factory building costs (1) | Construction costs (2) | Frame (3) | Brick, wood frame (4) | Brick, steel frame (5) | Reinforced concrete (6) |
|---|---|---|---|---|---|---|
| | Rel. to 1914 | Relative to 1913 | | | | |
| 1913 monthly average........ | ... | 100 | 100 | 100 | 100 | 100 |
| 1914 monthly average........ | 100 | 89 | 97 | 100 | 98 | 98 |

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*This subject is treated at greater length in "Income Tax Procedure—1926," by Robert H. Montgomery, published by The Ronald Press Company, New York.

| | | | | | | |
|---|---|---|---|---|---|---|
| 1915 monthly average........ | ... | 93 | 99 | 103 | 101 | 102 |
| 1916 monthly average........ | ... | 147 | 109 | 114 | 122 | 120 |
| 1917 monthly average........ | ... | 181 | 134 | 140 | 155 | 147 |
| 1918 monthly average........ | ... | 189 | 164 | 171 | 179 | 171 |
| 1919 monthly average........ | ... | 198 | 212 | 219 | 209 | 210 |
| 1920 monthly average........ | ... | 251 | 269 | 284 | 257 | 264 |
| 1921 monthly average........ | 179 | 202 | 196 | 216 | 201 | 207 |
| 1922 monthly average........ | 170 | 175 | 190 | 196 | 185 | 188 |
| 1923 monthly average........ | 202 | 214 | 209 | 219 | 212 | 210 |
| 1924 monthly average........ | 198 | 215 | 205 | 218 | 210 | 206 |
| 1925 monthly average........ | 195 | 207 | 202 | 210 | 202 | 200 |
| 1926 monthly average........ | 197 | 208 | 208 | 212 | 198 | 200 |

In the above, column one represents index numbers designed to show the relative changes in the cost of constructing a standard concrete factory building. The year 1914 gave a normal base and July 1920 with an index number of 265, represented the peak of costs.

Column two represents the Engineering News-Record construction cost index numbers based on the prices of steel, cement, lumber and common labor in 1913. These materials and common labor are weighted according to their relative importance. These weightings are: Steel, 37.50 per cent; cement, 7.14 per cent; lumber, 17.10 per cent; labor, 38 per cent. The weightings were determined by studying the annual production of the three prime materials and the number of common laborers (exclusive of farm labor) in the United States. The markets considered are structural steel in Pittsburgh, cement without bags f. o. b. Chicago; 3 x 12-in. to 12 x 12-in. southern pine to contractors in New York, and the average price of common labor in the eighteen to twenty cities listed in Engineering News-Record in the first issue of each month. The prices are those obtaining in the last week of each month and published in the first issue of each month. The quantities of these materials and the number of man-hours used in computing the index number were selected so that the total cost (quantities multiplied by prices, and added together) for 1913 would be $100 for a "unit of construction."

For example, if the quantities are 2500 lb. of structural steel, six barrels of cement, 600 feet b. m. of lumber, and 200 man-hours, and the prices are $1.50 per 100 lb. for shapes, $1.19 per net bbl. of cement, $28.50 per M ft. b. m. of lumber, and 19 cents per hour for common labor, the total computation will be $99.74; 100 is the base Engineering News-Record construction cost index number.

Columns three, four, five and six represent index numbers indicating construction costs for each month as based upon material and labor costs prevailing in the United States, weighted in accordance with cost percentages determined from buildings of each type actually constructed.

For the benefit of those who prefer to base appreciation or depreciation rather upon the wholesale price range of all commodities as determined by the United States Department of Labor, the following may be used:

## PRICE RANGE OF "ALL COMMODITIES"

### Index Number of Wholesale Prices

| | 1913 | 1914 | 1915 | 1916 | 1917 | 1918 | 1919 | 1920 | 1921 | 1922 | 1923 | 1924 | 1925 | 1926 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Jan. | 100 | 98 | 98 | 113 | 153 | 184 | 199 | 233 | 170 | 138 | 156 | 151 | 160 | 156 |
| Feb. | 100 | 99 | 99 | 115 | 157 | 186 | 193 | 232 | 160 | 141 | 157 | 151 | 160 | 155 |
| March | 100 | 98 | 99 | 119 | 162 | 187 | 196 | 234 | 155 | 142 | 159 | 149 | 161 | 151 |
| April | 100 | 98 | 99 | 121 | 173 | 190 | 199 | 245 | 148 | 143 | 159 | 148 | 156 | 151 |
| May | 99 | 97 | 100 | 122 | 183 | 190 | 202 | 247 | 145 | 148 | 156 | 146 | 155 | 152 |
| June | 99 | 97 | 99 | 123 | 185 | 191 | 203 | 243 | 142 | 150 | 153 | 144 | 157 | 152 |
| July | 100 | 97 | 100 | 123 | 188 | 196 | 212 | 241 | 141 | 155 | 151 | 147 | 159 | 151 |
| Aug. | 100 | 101 | 100 | 126 | 189 | 200 | 216 | 231 | 142 | 155 | 150.1 | 149 | 160 | 149 |
| Sept. | 102 | 102 | 100 | 130 | 187 | 204 | 210 | 226 | 141 | 153 | 154 | 148 | 159 | 150 |
| Oct. | 101 | 97 | 102 | 136 | 183 | 202 | 211 | 211 | 142 | 154 | 153.1 | 151 | 157 | 150 |
| Nov. | 100 | 97 | 104 | 146 | 183 | 203 | 217 | 196 | 141 | 156 | 152.1 | 152 | 157 | 148 |
| Dec. | 99 | 97 | 108 | 149 | 182 | 202 | 223 | 179 | 140 | 156 | 151 | 157 | 156 | 147 |
| Averages | 100 | 98 | 101 | 127 | 177 | 194 | 206 | 226 | 147 | 149 | 154 | 150 | 158 | 151 |

# CHAPTER 28

# OBSOLESCENCE

Impossible to estimate on a uniform basis—A weak link in uniform appraising—Obsolescence may be of two kinds, local and structural—Variation in depreciation tables—Table of depreciation for buildings with a given life—Public now demand better and consequently more expensive homes—The modern and obsolescent homes compared.

Obsolescent (economic or commercial) depreciation is impossible to compute on a uniform basis. It is one of the weak points in uniform appraisals, although a little experience examining the many special and particularly exorbitant and unfair demands which ingenious minds discover, claim and urge, would soon prove that it is a wide door for friends and a narrow door for foes. It would soon break down every semblance of uniformity. The thousands of buildings that property owners would urge for particular study and investigation by hundreds of assessors in a few weeks, of course, would prohibit such consideration under present laws and conditions. Indeed, such consideration would probably produce most inequitable and monstrous results. Few people appreciate the need of obsolescent depreciation. Indeed, many old residents take pride in the fact that their residences are "as good as 40 years ago." Not until they attempt to sell them will they appreciate that they are what others think them to be "good for" that gives them value.

Yet, notwithstanding the difficulties, every case must rest on its own circumstances. Every structure must be considered with reference to its condition and uses. In the words of the United States Board of Tax Appeals, Reports, IBTA 108:

> "In ascertaining the reasonable amount of a deduction for exhaustion, wear and tear of property used in business, the character of the properties, their location, surroundings and uses, must be given consideration, and their probable life will be determined in accordance with the conditions of each individual case.

> "Obsolescence is due to many causes and is of many kinds. W. C. Clark, economist for the S. A. Strauss Co., in an article appearing in the National Real Estate Journal during the year 1925, gave a short yet comprehensive analysis of the causes of obsolescence as follows:
>
> A. Mistakes in Promotion.
>    1. Unwise choice of location.
>    2. Wrong ratio between site value and building value.
>    3. Faulty planning.
>    4. Inefficient construction.
>    5. Inadequate or out-of-date equipment.
>
> B. Mistakes in Operation.
>    1. Unwise selection of tenants.
>    2. Inefficient or indifferent service.
>    3. Inadequate maintenance.
>
> C. Broad Economic Changes.
>    1. Increase in population and in land values.
>    2. Shifting of urban districts.
>    3. Decay or shifting of important industries.
>    4. Progress in the building arts.
>
> D. Other Causes.
>    1. Erection of new or larger or higher buildings.
>    2. The more modern and more complete service of newer buildings.
>    3. Damage caused by new adjacent buildings cutting off light and air.
>
> "The above is an excellent analysis of the many causes and kinds of obsolescence and these are particularly noticeable in higher priced structures. Perhaps the greatest field of obsolescence, at least the field more noticeable to the average person, is that pertaining to dwellings due, first, to local obsolescence, and second, to structural obsolescence."

Local obsolescence is a result of the character of the neighborhood changing in such a manner that a building has lost its desirability for the purpose for which it was intended. A dwelling of modern design and furnishings in a good location might be found to be later surrounded by commercial or industrial enterprises, or the thoroughfare on which the dwelling is located may be used in such a manner (street car traffic, heavy delivery, etc.), that the building diminishes in value because of its location.

Structural obsolescent depreciation is considered to have taken place in buildings that were constructed at a period when the type of construction and the style of plan and ornamentation differed from those in vogue today. In the older dwellings it is found that the ground floor area is much greater than today, occupying much of the lot. On the exterior, it is noticed that the porches are small and narrow. Profuse scroll work and gaudily detailed porches and cornices are no longer in good taste. The roof is covered with unpainted shingles, the siding is drop siding without sheathing boards underneath. There are a large number of rooms, parlor, reception hall, sitting room, small dining room, huge kitchen, bedrooms without adequate closet space, pantries, stair halls, etc., but seldom any bath room. The ceilings are high, as are the windows, the latter being very narrow—in fact, the lighting and ventilation leaves much to be desired. The floors are unfinished because they were covered by carpets. The interior wood work is of pine or poplar, grained to imitate more costly woods.

The house contains a small cellar, poorly lighted because the house foundation is low, and with a dirt bottom. Few old dwellings have any heating system other than a base burner and a kitchen range. The plumbing fixtures instead of the enameled ware are of zinc or copper, the wash stands of marble. The lighting is done either by kerosene lamps or gas jets.

Compare this with the modern dwelling. It is substantially constructed on a high foundation with plenty of windows. Under the entire house is a basement which contains heating plant, laundry tubs, hot water heater, etc. The porches very recently were of generous size, many homes having sleeping porches and refrigerator room porches.

The main floor is divided into a large living room, dining room, kitchen and perhaps a lavatory. The upper floor contains well lighted bed rooms with spacious clothes closets and linen cupboards. The bath room has enameled ware fixtures and often a tile floor. The floors of the entire house are polished and the wood work is of hard wood or pine varnished or enameled. The lighting system is electric with connections for heating appliances. The fixtures are in the ceiling, with fewer globes. Base plug outlets for ornamental lamps or for vacuum cleaner use are usually provided in every room of the house. A chute and speaking tubes connect the second floor with ground floor and basement. The outside of the house has water hydrants. The porch is frequently on the side and enclosed rather than across the whole front of the house.

This whole subject is well described in a magazine article giving reasons for the "higher cost of building residences."

"A bettered public taste is one of the chief items responsible for higher cost of home building today than home building ten years ago. While wage increases and increases in cost of building materials have, of course, brought about an actual increase in building costs, the increase for identical types of construction, the data would suggest, is probably not as great as the public is inclined to feel. For a type of construction identical with what it called for ten years ago is not what the modern home-building public is asking for.

"Here are some of the things that the contractors say:

"Ninety-five per cent of bungalow bathrooms being built in the typical American city today have tiled floors and recessed bathtubs, as compared to the pine floors and ordinary fixtures of 1913.

"While price of plumbing fixtures for the average home has gone up from $300 to about $600, the general group of people who ten years ago used the hand lighted water heater today demand an automatic instantaneous heater that adds a minimum of $200 to the total building cost. And they insist, too, on floor drains and plug outlets for their electrical laundry equipment, an equipment unknown ten years ago. Better basements are meaning an addition of from $150 to $1000 to the total cost of the home.

"Tremendous development in the use of electrical equipment throughout the home brings the cost of this item to $400 in the type of home where it would have cost $100 a decade ago.

"Ninety-eight per cent of the bungalows being built in the typical American city are being equipped with some form of patent insulation, an expense that did not grieve home-builders of ten years ago because very few of them knew anything about the science of insulation.

"Living room trim, formerly of pine, must today be of oak and birch, or must have an expensive coat of white enamel.

"One-piece combination sink and drain-boards and enamel kitchen fixtures with an enameled range are demanded where the ordinary sink was expected ten years ago."

In the apartment field many changes have taken place. In 1910 the six-room terrace type apartment was popular in many cities. Strictly apartment houses were then built and contained from five to ten or more rooms to each suite. There were wood floors in the bath rooms and a sun room was unheard of. Today few apartment houses contain suites of more than five rooms—many are from two to four rooms each with in-a-door beds, incinerators, tile floors and often walls in baths and many have iceless refrigerators in the kitchens.

A type of apartment house quite popular nowadays is the center corridor plan. In this there is a fireproof corridor the full length of the building on each floor and all suites are entered from this corridor. The suites in this type of building usually contain from two to four rooms each.

## VARIATION IN DEPRECIATION TABLES

Slight investigation is necessary to find great contrariety of opinion as to appropriate and acceptable standards of depreciation as above stated. The ordinary depreciation in the average mind is 2 per cent per annum. Cecil C. Evers, in his book on "The Commercial Problem in Buildings," is more liberal. He allows 2.90 per cent per annum for structural and 4 per cent for commercial depreciation per annum for cheap detached houses, while for good class apartment houses he allows 1.66 per cent for structural depreciation and 2.20 per cent for commercial depreciation, total apartment house depreciation 3.86 per cent.

Earl Schulz, in his excellent booklet on the effect of obsolescence on the useful and profitable life of office buildings, says: "It is apparent from a study of the causes and effects of obsolescence that the decrease in value of buildings due to this cause is greater than that due to physical deterioration. The average fireproof office building structure will probably last 75 to 100 years, but the rental will drop off about the thirtieth year."

The Cleveland Building Owners and Managers Association issued a pamphlet, much in demand, on Depreciation, Obsolescence and Appreciation, giving the economic life and the resultant necessary annual depreciation of the buildings, and also of the constituent parts thereof of office buildings, the more important of which are as follows:

**Buildings**

| Group Equipment | Economical Life | Percent Annual Depreciation |
|---|---|---|
| Class A construction | 50 years | 2% |
| Class B construction | 33 years | 3% |
| Class C construction | 33 years | 3% |
| Floors, wood | 20 years | 5% |
| Floors, marble and tile | 20 years | 5% |
| Plastering | 20 years | 5% |
| Sheet metal, spouting, etc. | 15 years | 6-2/3% |
| Hardware | 20 years | 5% |
| Roofing, tin | 15 years | 6-2/3% |
| Roofing, composition | 15 years | 6-2/3% |
| Roofing, shingle | 15 years | 6-2/3% |
| Stacks, brick | 33 years | 3% |
| Stacks, steel | 12 years | 8-2/3% |
| Doors | 33 years | 3% |
| Windows (complete) | 33 years | 3% |
| Interior Wood Trim | 40 years | 2½% |
| **Building Appurtenances** | | |
| Standpipes | 15 years | 6-2/3% |
| Flag Poles | 15 years | 6-2/3½ |
| Fire Escapes | 15 years | 6-2/3% |
| Deep Wells | 15 years | 6-2/3% |
| Sewers | 15 years | 6-2/3% |
| Sidewalks | 15 years | 6-2/3% |
| Paving | 25 years | 4% |
| Retaining Walls | 20-50 years | 2-5% |

| | | |
|---|---|---|
| Tanks, steel | 22 years | 4½% |
| Tanks, wood | 12 years | 8% |

**Mechanical Equipment**

| | | |
|---|---|---|
| Heating and ventilating | 20 years | 5% |
| Sprinklers | 20 years | 5% |
| Inside Electric Wiring | 20 years | 5% |
| Elevators | 20 years | 5% |
| Fire Alarm Apparatus | 20 years | 5% |
| Fire Prevention Apparatus | 20 years | 5% |
| Air Compressors | 20 years | 5% |
| Shafting, Pulleys | 20 years | 5% |
| Hangers, Belting | 20 years | 5% |
| Plumbing | 17 years | 6% |
| Electric Light & Power Wiring | 17 years | 6% |
| Refrigeration Machinery | 15 years | 6-2/3% |
| Laundry Machinery | 15 years | 6-2/3% |
| Lighting Fixtures | 15 years | 6-2/3% |

**Power and Steam Plant Equipment**

| | | |
|---|---|---|
| Boilers | 20 years | 5% |
| Water purifying Plant | 20 years | 5% |
| Engines | 20 years | 5% |
| Steam Turbines | 20 years | 5% |
| Superheaters | 20 years | 5% |
| Stokers—Moving parts | 20 years | 5% |
| Dynamos | 20 years | 5% |
| Electric Machinery—Generators | 20 years | 5% |
| Electric Machinery—Motors | 20 years | 5% |
| Switch Parts | 20 years | 5% |
| Cable, Underground | 20 years | 5% |
| Electric Wiring—Power Mchy. | 17 years | 6% |
| Steam Plant Equipment | 17 years | 6% |
| Piping | 13 years | 7½% |
| Stokers—Fixed Parts | 5 years | 20% |
| Storage Batteries | 17 years | 6% |
| Engines—Gas ond Oil | 13 years | 7½% |
| Fuel Oil System | 13 years | 7½% |
| Gas Plant Equipment | 15 years | 6-2/3% |
| Hydraulic Plant Equipment | 17 years | 6% |
| Pumps | 13 years | 7½% |

| **Furniture and Fixtures** | | |
|---|---|---|
| Partitions, Wood | 13 years | 7½% |
| Mechanical Office Equipment | 5 years | 20% |
| Telephone Equipment | 13 years | 7½% |
| Carpets, Rugs, Linoleum | 5 years | 20% |

## CHAPTER 29

# INTERPRETATION OF BUILDING COST FACTORS

Explanation of manner in which building appraisals should be determined—1927 costs approximately double those of 1913—Relative differences in costs of material—Houses decreasing in size throughout country—Definitions and classifications of schedules.

The classification of schedules presented herein with photographic illustrations were prepared by Deputy Auditor John Warner, chief building appraiser in Cleveland, an architect of note and standing in the community. The data, especially as to the higher classes, is based on affidavits of cost on file in the County Auditor's Office of Cuyahoga (Cleveland) county. It should be stated that no assessment of the larger buildings is finally determined until such affidavit is filed and checked up, thus equipping the assessing office to an unusual degree with the necessary knowledge of building costs from year to year. A copy of the affidavit used, as well as the building card for residences used may be found in the addenda.

Costs, both on a pre-war and January 1927 basis are shown for the reason that the prices of the year 1913 are the basis of statistics of the United States Department of Labor showing the trend of building costs and costs of various other commodities. Furthermore, the Treasury Department uses the year 1913 as a base in calculations to determine profits and gains in connection with the federal income tax returns. In fact, until the year 1913 building costs did not fluctuate greatly from year to year and when the year 1913 is mentioned it refers in a general way to the several years preceding the war period.

The 1927 basis is deemed to be approximately double the 1913 basis. Inasmuch as costs of building material are changing from year to year, and as labor efficiency decreases with industrial prosperity and increases with industrial depression, allowance must be made therefor. The bulletins of the Department of

Labor giving index prices should be watched for rise or fall of building materials. Where appraisals are to be made as of intermediate dates, between 1913 and 1927 transmute these values according to the index table of building costs found elsewhere herein.

The factors given for the various types have been arrived at by examination of the known cost of thousands of buildings erected in Cleveland. Recognizing that varying circumstances and methods under which buildings are erected, such as the cost plus system, general contract, separate contract, and direct labor, the factors in order to be consistent and show the proper relativity have all been taken as an average cost of the work done under usual conditions by the general contract method, that is, the cost of labor and materials, plus the contractor's profit, but excluding financing and other varying charges pending construction.

It is not claimed that every building of any given description will cost exactly the figure shown in the schedules for that particular type, even if done under the method taken as the standard, for it is a well known fact that contractors estimating the cost of a building may vary as much as 100 per cent in the amount of their bids. Who shall say that the amount of the low bidder's contract always represents the true value of the building? Therefore, a cross-section of many known costs is more valuable than the knowledge of cost of but one or two structures.

Owing to the unending variety of designs and specifications for buildings of every occupancy, it is impossible to prepare a group of schedules that would exactly apply to every building to be examined. It is believed, however, that with the number of specimens shown, most buildings especially of the dwelling apartment house and mercantile types, may be appraised with little or no change from the established factors.

For example, either a brick or frame illustration but not both may be shown. Generally speaking, brick residences are valued 10 per cent more than frame residences. Thus a frame standard may be altered to secure a brick cost by adding 10 per cent. Considerable controversy has arisen as to the relative cost of frame and brick structures. There appeared recently in various newspapers advertisements inserted by lumber and masonry material concerns advocating the use of their respective products and each submitting figures showing the cost of a building constructed with its material and the cost of a building constructed with the other concern's products.

The detailed cost figures of the material producers, when placed side by side, show amazing inconsistencies and it is not to be wondered at if the prospective home builder is perplexed in trying to reconcile the estimates set forth by those interested in the production and distribution of building materials. A masonry products concern states that for a certain type of dwelling that would cost $7500 if built of brick, the builder would pay $7100 if constructed in frame. The cost of the brick would be 5.6 per cent over the frame building.

A lumber manufacturer's association advertises that a certain type of frame house to be built for $4080 would cost $5007 if built of common brick with a face brick front. This would indicate an increase of 22.7 per cent. The difference between frame and an all-face brick home on this schedule would be about 24 per cent.

Shall the uninitiated person build his home with the idea that the cost of the masonry building is 5.6 per cent above the all-lumber one, or shall he assume the difference is 24 per cent?

Of course, the difference of cost in the two examples differs as the quantity of outside wall material bears to the amount of building material in the entire house. It must be remembered that the cost of the largest portion of the structure remains constant whether the outside walls are of masonry or lumber. For example, the expenditure for roof, foundation, floors, interior trim, windows, doors, stairways, heating, plumbing, lighting fixtures, etc., are the same in each type. Porches and similar appurtenances tend to widen the gap in the difference of cost to a great degree because when a porch, for example, is constructed of brick, a considerable quantity of stone is often used for copings, steps, etc. Then, too, a brick porch often contains a re-enforced concrete floor. From an examination of a large number of building costs, it seems that the difference in cost of a home between the two materials, viz., brick and wood, is from 10 to 13 per cent. This, of course, is a cross section of many buildings examined.

This estimate is supported by figures prepared for The Building Brick Association of America which conducted an investigation some time ago in which five builders of well known reputation and experience submitted estimates of cost of an eight room dwelling of good design and excellent arrangement in nine different combinations of materials. the figures of which ranged as follows:

| | | |
|---|---|---|
| 1. | Wood, with siding—(Base) | 100.0% |
| 2. | Wood, with shingle covering | 101.6% |
| 3. | Stucco on wood | 102.8% |
| 4. | Brick Veneer, on wood studding | 106.1% |
| 5. | Stucco on hollow blocks | 106.2% |
| 6. | Brick Veneer on Boarding | 107.5% |
| 7. | Brick with 10″ hollow wall (2″ air space) | 108.3% |
| 8. | Brick with veneer on hollow blocks | 110.7% |
| 9. | Brick with 12″ solid walls | 113. % |

This result shows that the cost of 12-inch solid brick walls over the cost of frame with wood siding is 13 per cent.

Then, again, it is common practice to back the face brick wall with hollow building tile. In such cases the brick wall will cost only 10.7 per cent more than a wood siding frame residence.

For these reasons, we believe we are justified in considering a brick building as worth approximately 10 per cent more than a frame building and the schedules should accordingly be interpreted.

Where a given building description agrees with that shown in the schedule, the factor should be applied to the ground floor area or the cubage of the building as the case may be. Changes of the factor should be made when the building description indicates a more costly or cheaper building, or one of different size than the specimen.

It has been established that an increase of 10c per 100 square feet should be allowed in the 1913 cost factors when the area of a single dwelling (Schedule 1 Classes 1 to 6) falls short of that given schedule. A deduction of 10c per 100 square feet should be allowed in the 1913 cost factors where the building exceeds that given in the schedule.

In the two-family and double type dwellings, the change of factor should be greater than that shown for the single-family dwellings. These increases and decreases will apply up to a variation of 20 per cent from the given area. From that point on, no standardization is advised.

An exhaustive study indicated that the average one-family six-room dwelling erected prior to 1910 in Cleveland covered 750 square feet ground floor area. In the last few years the average small house has gradually decreased in size until the standard area has now been fixed at 650 square feet. This would seem to be explained by the fact that the rise in building costs compelled a reduction in the size of the house in order that the average person might construct a house at a cost within his means.

This decrease in size, however, has not resulted in a general decrease in cost of such houses. Strange to say that while the size of the house has diminished and some other economies have been effected—such as the substitution of asphalt shingles for slate, elimination of exterior and interior ornamental details, front porches, to some extent, hollow tile for solid brick—many more costly features are now installed in such houses. For example there are now brick and tile foundations instead of stone; yellow pine billstuff instead of hemlock and Norway pine; additional electrical outlets; hardwood finish instead of yellow pine; finer plumbing fixtures such as kitchen sinks with enameled drain-boards; pedestal lavatories and built-in bath tubs.

What has been said of the most common type of house applies in no less degree to the more pretentious homes. Indeed, more difficulty is experienced in endeavoring to standardize the better class of dwellings than ever before, owing to the fact that contrary to the earlier practices many of the new homes are copied after the English and French country houses with varying roof heights and a complexity of elevations, and with garages often included in the main house area as well as one-story sun rooms with a main roof sometimes projecting over same.

Owing to the fact that the other classes of buildings are so difficult of standardization, no reliable figure can be given for the variations from the standard area as to such classes. It may be noted in some of the more important classes of buildings that the factors of the large and costliest buildings are not relatively increased over some of the smaller and evidently less expensive. This is accounted for in a large measure, by the difference in size.

All factors are to be applied either to the ground floor area or the cubage of the building. In one and two-story buildings, where the story heights are quite uniform, the square foot factor is employed. By ground floor area is meant the area of the structure at the grade level as determined by multiplying the width at the extreme outside wall line by the corresponding depth. In these calculations, open porches, bay windows (not extending to basement), projecting vestibules and other similar appurtenances are not to be included in the area of the building proper. Their cost, within certain limitations, has been recognized in preparing the factor for the main portion of the building. Of course, where these projections are not specified in a given class, they should be added in a separate process. Or if the schedule allowed these features and they are not found in the building to be appraised, a deduction should be made for their absence.

Cubic foot prices are based on the cubage arrived at by multiplying the length by the breadth by the height of the building. The area, of course, is determined by the measurements "over all" the outside walls. The height is arrived at in a gable roof dwelling by measuring from the bottom of the basement floor to a point equi-distant between the roof plate line and the ridge. In a flat-roof building, the distance from the bottom of the basement floor line to the roof taken midway in the roof slope should be used. In larger buildings with heavy footings, the distance taken for the height is from the average footing depth to the average roof line. In all cases where cubic foot computations are used, measurements of the elevator and stairway pent houses on the roof, basements under sidewalks and extra depth for the boiler room should be added to the cubage of the building proper.

While both square foot and cubic foot prices are given in only a few cases for a single type, the appraiser may use either method of estimating from these schedules. That is to say, where a ground floor area price is given, he may by dividing the height of the building into the square foot area factor of same obtain the cubic foot cost. For example, we find that the square foot price of a certain dwelling is $8.00, the height of the building is 33 feet $8.00 divided by 33 is 24 2/10 cents, the cost per cubic foot.

Obviously, where cubic foot costs are given, the square foot cost may be obtained by multiplying the cubic foot cost by the height of the building. The square foot cost per floor price may be found by multiplying the cubic foot factor by the floor to floor story height.

The height of various kinds of buildings as built today are approximately as follows:

| DWELLINGS | (GABLE ROOF) |
|---|---|
| Basement | 8 feet floor to floor |
| 1st Story | 10 feet floor to floor |
| 2nd Story | 10 feet floor to floor |
| Attic | 5 feet ½ the distance from plate line to ridge. |
| Total height | 33 feet |

If the dwelling is one or three stories high, deduct or add 10 feet from the height given above.

| APARTMENTS | (FLAT ROOF) |
|---|---|
| Basement | 9 feet floor to floor |
| 1st Story | 10 feet floor to floor |
| 2nd Story | 10 feet floor to floor |
| Space between top floor seiling and roof, average | 4 feet estimated |
| Total height | 33 feet |

When the number of stories exceeds two, increase the total height by 10 feet for each additional story, bearing in mind that as the story height increases, the footings are deeper and a further addition must be made for this reason.

Newer office buildings will be found to be of a somewhat uniform height as to their typical floors. The prevailing height on the upper floors is about 11 feet, floor to floor, while the first floor (usually used for mercantile purposes) is from 14 to 18 feet in height. In the older office buildings the office floor story heights are frequently 13 and 14 feet. Of course, when the ground floor is occupied by a bank, this story may be found to be 25 feet or more.

Hotel building heights will be found to closely correspond to that of office buildings, while large down-town store buildings will average 15 feet from floor to floor. Smaller neighborhood store heights are about 12 feet high or 11 feet in the clear (floor to ceiling).

The original "classification of building type" method appraisal in vogue in Cleveland since 1910 has been proven correct both in the matter of speed and accuracy. The square foot process used in Cleveland is now used in most of the larger cities. In only isolated cases is the cumbersome cubic foot method used. The outstanding improvements shown in this second edition are, among other things:

(a) Further discussion of the amount of tolerance necessary in the factor to comport with the various building areas.

(b) Further elasticity to the schedules by preparing table of unit prices for additions and deductions where a building differs slightly from the nearest type.

## DEVIATIONS FROM BUILDING COST SCHEDULES

The factors used for the various types are to be applied where the description of the building to be appraised agrees with the standard. Where deviations from the standard are found lump sums are to be added or subtracted according to the following table. All additions or deductions in this table and also the garage prices are on the year 1927 or 200 index number basis and apply particularly to classes 1, 2, 3, 4 or 5 as indicated.

## ONE STORY ADDITIONS TO DWELLINGS

Classes 1 to 5

| | Without Basement | |
|---|---|---|
| Area | Frame | Brick |
| 50 sq. ft. | $4.00 | $5.30 |
| 100 sq. ft. | 3.80 | 5.00 |
| 150 sq. ft. | 3.60 | 4.70 |
| 200 sq. ft. | 3.40 | 4.30 |

If enclosed porch, add difference between cost of one-story addition given above and that of an open porch.

**Plaster**

Plastered attic, undivided area—

| | |
|---|---|
| 600 sq. ft. | $260.00 |
| 650 sq. ft. | 270.00 |
| 700 sq. ft. | 280.00 |
| 750 sq. ft. | 290.00 |
| 800 sq. ft. | 300.00 |

Add to above for subdivided attic per room, $60.

Plastered basement ceiling—

| | |
|---|---|
| 600 sq. ft. | $50.00 |
| 700 sq. ft. | 60.00 |
| 800 sq. ft. | 70.00 |

**Tile Floors and Wainscot**

Classes 2 to 5—

| | |
|---|---|
| Tile floor in bath room, add | $ 60.00 |
| Tile floor in vestibule or lavatory, add | 30.00 |
| Tile wainscot in bath 4′ 0″ high | 130.00 |
| Tile wainscot in lavatory | 100.00 |
| China Cabinets or Book Cases, each | $ 50.00 |
| Mantels, extra flue included, each | 120.00 |
| In-a-door Beds, each | 50.00 |

**Basement**

Class 1, add for full basement—

| | |
|---|---|
| 600 sq. ft. | $230.00 |
| 650 sq. ft. | 250.00 |
| 700 sq. ft. | 270.00 |
| 750 sq. ft. | 290.00 |
| 800 sq. ft. | 310.00 |

**Siding**

Classes 1 to 5 inclusive

Add for Bungalow or Shingle siding—

| | |
|---|---|
| 600 sq. ft. | $ 70.00 |
| 650 sq. ft. | 80.00 |
| 700 sq. ft. | 90.00 |

| | |
|---|---|
| 750 sq. ft. | 100.00 |
| 800 sq. ft. | 110.00 |

Class 2

Deduct for drop siding—

| | |
|---|---|
| 600 sq. ft. | $170.00 |
| 650 sq. ft. | 180.00 |
| 700 sq. ft. | 190.00 |
| 750 sq. ft. | 200.00 |
| 800 sq. ft. | 210.00 |

**Tile Roofing**

Add for cement or clay tile—

| | Cement Tile | Clay Tile |
|---|---|---|
| 650 sq. ft. | $ 80.00 | $230.00 |
| 700 sq. ft. | 90.00 | 250.00 |
| 750 sq. ft. | 100.00 | 270.00 |
| 800 sq. ft. | 110.00 | 290.00 |
| 850 sq. ft. | 120.00 | 310.00 |
| 900 sq. ft. | 130.00 | 330.00 |

**Projections**

| | |
|---|---|
| Dormers—4′ to 6′ wide, each | $60.00 |
| Bay windows, each, per floor | 60.00 |

**Outside Chimney**

| | |
|---|---|
| Add | $100.00 |

**Porches**

Classes 1 to 5—

| | |
|---|---|
| One-story frame (per sq. ft.) | $1.50 |
| Two-story frame (per sq. ft.) | 2.50 |
| Brick up to floor and piers to rail add (per sq. ft.) | .60 |
| Brick up to rail add (per sq. ft.) | 1.20 |

Including masonry, steps and brick columns to ceiling.

**Plumbing**

In all cases where a single bath room is provided for in the description of a type it is intended the cost given will cover the installation of a bath, lavatory and closet. Laundry trays, hot water storage tanks and heaters are also included in the prices given.

| | |
|---|---|
| Complete for one family, add | $350. |

| | Classes 1 to 5 incl. | Classes 6 to 9 incl. |
|---|---|---|
| Add for extra bath room | $200.00 | $450.00 |
| Add for extra fixtures, each | 70.00 | 100.00 |
| Add for automatic heater | 100.00 | |

**Heating .**

Hot air heating—

| Square feet | 1 story | 2 stories |
|---|---|---|
| 600 to 800 | $150.00 | $200.00 |
| 800 to 1000 | 180.00 | 250.00 |
| 1000 to 1200 | 220.00 | 320.00 |

Hot water, steam or vapor heating—

| Square feet | 1 story | 2 stories |
|---|---|---|
| 600 to 800 | $490.00 | $730.00 |
| 800 to 1000 | 580.00 | 900.00 |
| 1000 to 1200 | 660.00 | 1040.00 |
| 1200 to 1400 | 710.00 | 1170.00 |
| 1400 to 1600 | 750.00 | 1270.00 |

## PRIVATE GARAGES

Class 1—

Drop siding, paper roof flat or gable, no floor, doors of matched lumber, no masonry foundation

| | 1 car | 2 cars |
|---|---|---|
| Frame | $100.00 | $150.00 |
| Tile | 150.00 | 220.00 |

Class 2—

Drop siding, flat roof, *cement floor, *paneled, glazed doors, *electric lights, *masonry foundation.

| | 1 car | 2 cars | 3 cars |
|---|---|---|---|
| Frame | $200.00 | $320.00 | $440.00 |
| Brick | 320.00 | 500.00 | 680.00 |

Add for sewer and water, $100.
Add for brick garages larger than 3 cars, $180 per car.
Deduct for no floor $30 per car.

Class 3—

*High grade construction, *gable, slate or stained shingle roof, cement floor, paneled glazed doors, *sewer and water.

| | 2 cars | 3 cars |
|---|---|---|
| Frame | $ 800.00 | $1000.00 |
| Brick | 1300.00 | 1700.00 |

Add for clay tile roof, 1 car $100.
Add for clay tile roof, 2 cars $160.00
Deduct for no sewer or water $100.

# CHAPTER 30

# LOCAL LABOR AND MATERIAL COSTS AS AFFECTING PRICES

How to translate values of buildings illustrated in this book into values and building costs as represented in your city—Effect of wages on building costs—Efficiency of labor less in larger cities—Open and closed shop conditions affect building costs.

All schedules of building costs shown herein are based on the prices of materials and labor prevailing in the Cleveland district. In order that proper adjustments may be made to translate conditions existing in other localities, the following table of Cleveland material and labor costs of 1927 is given:

## BUILDING MATERIAL PRICES—MASONS SUPPLIES

| | | | |
|---|---|---|---|
| Common brick | delivered on job | $16.00 | per M |
| Construction tile 5″ x 8″ x 12″ | delivered on job | 70.00 | per M |
| Portland Cement (paper sacks) | delivered on job | .80 | per sack |
| Mason's lime (paper sacks) | delivered on job | .40 | per sack |

## LUMBER MATERIALS

| | | | |
|---|---|---|---|
| Sanded plaster (paper sacks) | delivered on job | $11.00 | per ton |
| Yellow pine piece stuff 2″ x 4″—18′ long | | 64.00 | per M |
| Yellow pine piece stuff 2″ x 8″—12′ long | | 57.00 | per M |
| Lath—No 1 White pine | | 13.75 | per M |
| Oak flooring No. 1 common | | 100.00 | per M |
| Yellow pine flooring No. 1 common | | 80.00 | per M |
| Plain oak finish—100 lineal feet (1″ wide) | | 2.50 | |
| Yellow pine finish—100 lineal feet (1″ wide) | | 1.10 | |
| Siding ½″ x 6″ | | 8.00 | per M |
| Asphalt shingles | | 8.00 | per 100 sq. ft. |

## HOURLY WAGES PAID IN BASIC BUILDING TRADES

| Trade | Rate per hour |
|---|---|
| Laborers, all building crafts | .87½ |
| Bricklayers | 1.62½ |
| Carpenters | 1.37½ |
| Painters | 1.25 |
| Stone Masons | 1.50 |

| | |
|---|---|
| Tile Setters | 1.50 |
| Marble Setters | 1.50 |
| Plasterers | 1.62½ |
| Lathers, Metal or Wood | 1.62½ |
| Plumbers | 1.50 |
| Steamfitters | 1.50 |
| Structural Iron Workers | 1.50 |
| Sheet Metal Workers | 1.37½ |
| Cement finishers | 1.25 |
| Roofers—composition | 1.40 |
| Roofers, Slate and Tile | 1.50 |
| Electrical Workers | 1.50 |
| Hoisting Engineers | 1.30 |

Probably the greatest variance in building costs in different locations is found in labor costs. In some of the larger cities like Cleveland practically all construction work is done by union workmen who receive the highest wage. In less populous districts it will be found that the item of labor cost is relatively lower than in the larger cities where the labor unions are more firmly established.

As to the cost of lumber, hardware, masons supplies, plumbing fixtures and other materials no great disparity will be observed in the prices quoted in different sections of the country. Lumber prices are affected in the greatest degree by transportation freight rates; that is to say, the farther a city is from the source of lumber supply the greater the cost of transportation and the higher the cost of lumber. For example, because of its relative distance from the western timber states certain kinds of lumber cost $1.00 more per thousand feet in Cleveland than they do in Detroit and $2.00 more per thousand than in Chicago. Likewise, southern lumber costs more in Cleveland, Buffalo, New York, etc., than it does in the cities closer to the southern source of supply.

It should be borne in mind however that it is quite possible when certain building materials are found to be comparatively high in price in any locality, others because of local conditions might be relatively lower. Many builders' supplies such as brick, tile, cement blocks, paints, varnishes, furnaces, lighting fixtures, etc., are often produced locally and the cost on all these items will average closely wherever the materials are bought.

In examination of the cost of labor and material items of the average dwelling house in Cleveland, it has been found that the labor represents approximately one-third and the materials two-thirds of the cost of such buildings. In making allowances for the change in labor prices this portion of the total cost of the building should be weighted as shown, namely 33 1/3 per cent of the whole.

Another factor which should be given consideration is the efficiency of labor. It is probable that in the larger cities labor will be found to be less efficient than in the smaller cities or villages. It should also be borne in mind that efficiency in labor depends very greatly on industrial conditions. In times of depression when workmen fear the loss of their jobs, more intense application is given in the performance of their duties. On the other hand, in prosperous times when employment is not hard to secure there is a tendency to slacken in the quantity of production per day's employment. The spread between these two peaks of prosperity and depression may involve as much as 50 per cent in the efficiency of labor. This should be reflected in the cost price of the structure.

Another factor much stressed by certain interests is the question of cost under closed or open shop. The National Association of Manufacturers in the month of May, 1926, issued a statement showing the cost of churches in the United States under closed and open shop conditions as follows:

CHURCHES ERECTED
Open Shop

| Town | Cost per Cubic Foot |
|---|---|
| Poughkeepsie, N. Y. | .60 |
| Birmingham, Ala. | .50 |
| Detroit, Mich. | .50 |
| San Antonio, Texas | .48 |
| Sioux Falls, S. D. | .48 |
| Fort Wayne, Ind. | .47 |
| Little Rock, Ark. | .40 |
| Baltimore, Md. | .37 |
| Battle Creek, Mich. | .37 |
| Jacksonville, Fla. | .35 |

CHURCHES ERECTED
Closed Shop

| Town | Cost per Cubic Foot |
|---|---|
| New York City | 1.25 |
| Cleveland, Ohio | .63 |
| Pittsburgh, Pa. | .48 |
| Cincinnati, Ohio | .45 |
| Madison, Wis. | .45 |
| Youngstown, Ohio | .38 |
| Perth Amboy, N. J. | .33 |
| Granite City, Ill. | .32 |
| Decatur, Ill. | .30 |
| Peoria, Ill. | .29 |

| | |
|---|---|
| Jackson, Mich. | .35 |
| Canton, Ohio | .35 |
| Lima, Ohio | .35 |
| York, Pa. | .35 |
| Los Angeles, Cal. | .30 |
| Reading, Pa. | .29 |
| Wichita, Kansas | .28 |
| Marion, Ohio | .28 |
| Oakland, Cal. | .25 |
| Berkeley, Cal. | .24 |
| Beaumont, Texas | .24 |
| San Diego, Cal. | .21 |
| St. Paul, Minn. | .17 |
| Average for 23 towns | .355 |

| | |
|---|---|
| Newton, Iowa | .28 |
| Topeka, Kansas | .25 |
| Kansas City, Mo. | .25 |
| Average for 13 towns | .435 |

It appears from the above that churches under the open shop cost from 60c to 17c, while churches erected under the closed shop cost from $1.25 to 25c, an average under the former of 35.5c, and under the latter, 43.5c.

The following list was prepared by the committee on the open shop of the National Association of Manufacturers and gives the school costs in various cities under open and closed shops:

SCHOOLS BUILT
Open Shop

| Town | Cents per Cubic Foot |
|---|---|
| Hartford, Conn. | $0.45 |
| York, Pa. | .43 |
| Detroit, Mich. | .40 |
| Canton, Ohio | .40 |
| Erie, Pa. | .38 |
| Atlanta, Ga. | .33 |
| Toledo | .33 |
| Poughkeepsie, N. Y. | .32 |
| Flint, Mich. | .32 |
| St. Paul, Minn. | .31 |
| Rockford, Ill. | .30 |
| Terre Haute, Ind. | .30 |
| Lima, Ohio | .30 |
| Muskegon, Mich. | .29 |
| Beaumont, Texas | .29 |
| Akron, Ohio | .29 |
| Columbus, Ohio | .29 |

SCHOOLS BUILT
Closed Shop

| Town | Cents per Cubic Foot |
|---|---|
| New York City | $0.59 |
| Chester, Pa. | .57 |
| Providence | .53 |
| Wilkes-Barre, Pa. | .51 |
| Torrington | .50 |
| St. Louis | .50 |
| Cleveland | .47 |
| Boston | .46 |
| Manchester, N. H. | .45 |
| Pittsburgh | .44 |
| Bridegport | .43 |
| New Britain, Conn. | .41 |
| Utica | .40 |
| Youngstown | .40 |
| Des Moines | .38 |
| El Paso | .37 |
| Waterbury, Conn. | .35 |

| | | | |
|---|---|---|---|
| New Haven, Conn | .28 | Washington, D. C | .35 |
| New Orleans | .28 | Perth Amboy, N. J | .35 |
| Ft. Wayne, Ind | .27 | Syracuse | .35 |
| Birmingham, Ala. | .26 | Denver | .32 |
| San Diego | .26 | Portland, Ore. | .30 |
| Newton, Iowa | .26 | Indianapolis | .28 |
| Omaha, Nebr. | .26 | Kansas City, Mo | .28 |
| Salt Lake City | .26 | Evansville, Ind. | .27 |
| Richmond, Va. | .26 | Louisville | .27 |
| Tucson, Ariz. | .25 | Peoria | .25 |
| Average for 27 towns | $0.31 | Average for 27 towns | $0.40 |

It costs 29% more to erect public schools under closed shop conditions than under open shop.

The above averages are national. Comparisons cannot be made between any two cities owing to influence of individual conditions of each city. These differences are sufficiently offset, however, in considering a large number of cases so that the national averages are correct. Above figures relate only to school buildings.

It will be noticed that the difference between the highest viz., New York City with 59c, is 156% higher than Tucson, Arizona, with 25c.

## CHAPTER 31

## DEFINITIONS AND CLASSIFICATIONS OF SCHEDULES

Statements of differences between types of buildings shown —Lists of illustrations.

For purposes of careful comparison it will be necessary to have in mind the following definitions:

ONE-HALF STORY is one where the walls extend at least 4 feet above any given floor but are less than a full story in height. For instance, a frame house, having 18 foot studs, with roof rafters and attic joists resting on the plate, is a 2-story building whether or not there is an attic finished or unfinished; but if the walls extend above the plate line, say four or five feet, but less than a story in height, the building is two and one-half stories high.

SINGLE DWELLING. A detached building designed for the use of one family. Cottage or bungalow type with extension of main roof over front porch.

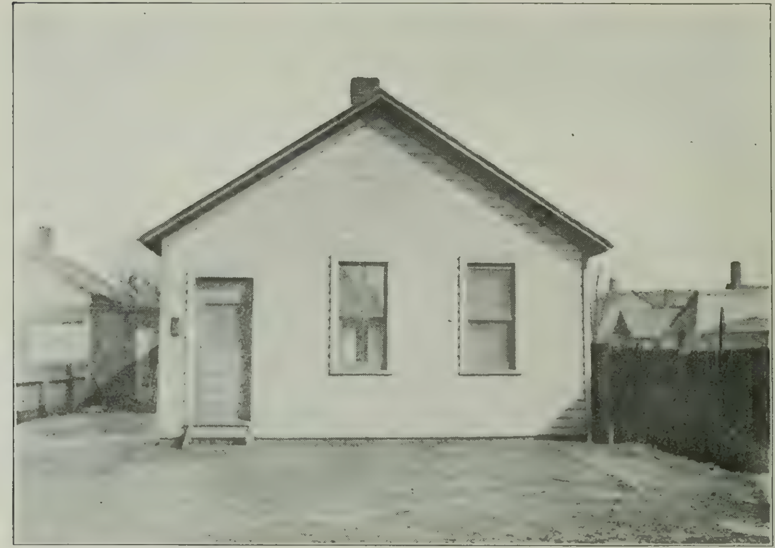
DOUBLE DWELLING. A building designed for the use of two families living independently of each other and each having use of one-half of the building on all floors.

A TWO-FAMILY DWELLING. A building designed for the use of two families, one using the first floor and one the second with generally joint use of the basement and attic and with either separate or common entrances.

APARTMENT BUILDING. A building designed for the use of more than two families arranged in suites entirely independent of each other, but using a common entrance.

HOTEL. A building designed for the accommodation of the public, having sleeping and dining rooms.

RESIDENTIAL HOTEL. A building used for residential purposes in which hotel service is rendered. This type of hotel or apartment usually contains a public dining room, lounging room and other features common to a hotel. The suites are usually of two or more rooms and are rented to guests who engage the suites for an extended period.



## ONE-FAMILY DWELLING

Simple Construction

| **SCHEDULE 1** | **CLASS 1** |
|---|---|
| Walls | Narrow or drop siding or common brick |
| Roof | Gable, shingle |
| Basement | Small cellar |
| Attic | None |
| Projections | None |
| Interior finish | Pine |
| Heating | Stoves |
| Plumbing | Toilet and kitchen sink |

| | | 1 story | 1½ story | 2 stories |
|---|---|---|---|---|
| 1913 reproduction cost factors | Frame | $1.00 | $1.50 | $1.80 |
| | Brick | 1.10 | 1.70 | 2.00 |
| 1927 reproduction cost factors | Frame | 2.00 | 3.00 | 3.60 |
| | Brick | 2.20 | 3.40 | 4.00 |

Area—Optional. Standard—Ground floor area—See page 330 for deviations.

## ONE-FAMILY DWELLING

Simple Construction

| **SCHEDULE 1** | **CLASS 2** |
|---|---|
| Walls | Narrow siding |
| Roof | Gable, shingle |
| Basement | *Under entire building, block foundation |
| Attic | *Unfinished |
| Projections | *None except porch |
| Interior finish | Pine finish and pine floors throughout |
| Heating | Stoves |
| Plumbing | *One bath room |

| | | 1 story | 1½ story | 2 stories |
|---|---|---|---|---|
| 1913 reproduction cost factors | Frame | $1.60 | $2.50 | $3.00 |
| | Brick | 1.80 | 2.80 | 3.30 |
| 1927 reproduction cost factors | Frame | 3.20 | 5.00 | 6.00 |
| | Brick | 3.60 | 5.60 | 6.60 |

Area—Optional. Standard—Ground floor area—See page 330 for deviations.

---

*Additional feature over preceding type.

## ONE-FAMILY DWELLING

| **SCHEDULE 1** | **CLASS 3** |
|---|---|
| Walls | Narrow siding |
| Roof | Optional except tile |
| Basement | Under entire building |
| Attic | Unfinished |
| Projections | None except porch |
| Interior finish | *Pine finish. Oak floors. No built-in features |
| Heating | *Hot air system |
| Plumbing | One bath room |

| | | 1 story | 1½ story | 2 stories |
|---|---|---|---|---|
| 1913 reproduction cost factors | Frame | $2.40 | $3.20 | $3.60 |
| | Brick | 2.70 | 3.50 | 4.00 |
| 1927 reproduction cost factors | Frame | 4.80 | 6.40 | 7.20 |
| | Brick | 5.40 | 7.00 | 8.00 |

Standard: 650 sq. ft. ground floor area. Deduct 20c per 50 sq. ft. additional area for 1927 value. Add 20c for similar deduction.

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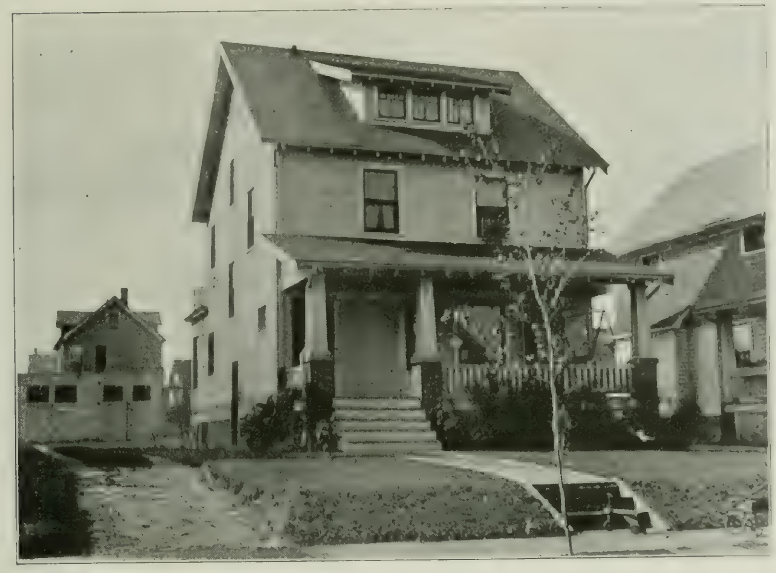
*Additional feature over preceding type. See page 330 for deviations.



ONE-FAMILY DWELLING

| **SCHEDULE 1** | **CLASS 4** |
|---|---|
| Walls | Narrow siding |
| Roof | Optional, except tile |
| Basement | *Under entire building. Brick or stone foundation |
| Attic | Unfinished |
| Projections | *2 dormers or bay windows and full porch |
| Interior finish | *Hardwood or white enamel. Mantel and other built-in features<br>Wood floor in bath room |
| Heating | Hot air system |
| Plumbing | One bath room |

| | | 1 story | 1½ story | 2 stories |
|---|---|---|---|---|
| 1913 reproduction cost factors | Frame | $3.20 | $3.80 | $4.20 |
| | Brick | 3.50 | 4.20 | 4.60 |
| 1927 reproduction cost factors | Frame | 6.40 | 7.60 | 8.40 |
| | Brick | 7.00 | 8.40 | 9.20 |

Standard: 650 sq. ft. ground floor area. Deduct 20c per 50 sq. ft. additional area for 1927 value. Add 20c for similar deduction.

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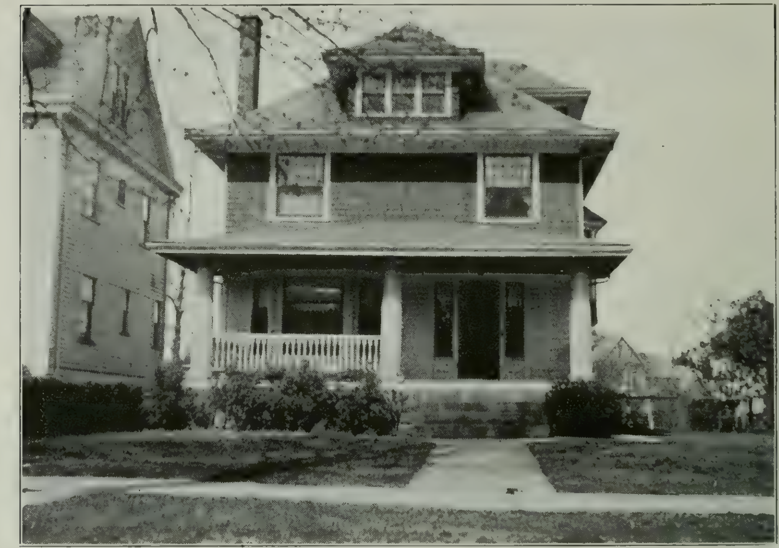
*Additional feature over preceding type. See page 330 for deviations.



## ONE-FAMILY DWELLING

| **SCHEDULE 1** | **CLASS 5** |
|---|---|
| Walls | Narrow siding or half shingle |
| Roof | Optional except tile |
| Basement | Under entire building |
| Third floor | *Plastered, undivided area |
| Projections | 2 dormers or bay windows, full porch |
| Interior finish | Hardwood or white enamel, one mantel and other built-in features |
| Tile floor | *In bath room |
| Heating | *Hot water, steam or vapor |
| Plumbing | One bath room |

| | | 1 story | 1½ story | 2 stories |
|---|---|---|---|---|
| 1913 reproduction cost factors | Frame | $3.70 | $4.60 | $5.00 |
| | Brick | 4.10 | 5.00 | 5.50 |
| 1927 reproduction cost factors | Frame | 7.40 | 9.20 | 10.00 |
| | Brick | 8.20 | 10.00 | 11.00 |

Standard: 750 sq. ft. ground floor area. Deduct 20c per 50 sq. ft. additional area for 1927 value. Add 20c for similar deduction.

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*Additional feature over preceding type. See page 330 for deviations.

## ONE-FAMILY DWELLING

2 story

| **SCHEDULE 1** | **CLASS 6** |
|---|---|
| Walls | Shingle or bungalow siding exterior walls |
| Roof | Optional, except tile |
| Basement | Under entire building |
| Third floor | *Plastered—with one bath room |
| Interior finish | *Hardwood and white enamel with two mantels and other built-in features, tile floor in one bath room |
| Heating | Hot water, steam or vapor |
| Plumbing | *Total, two bath rooms |

| | | |
|---|---|---|
| 1913 reproduction cost factors | Frame | $6.10 |
| | Brick | 6.70 |
| 1927 reproduction cost factors | Frame | 12.20 |
| | Brick | 13.40 |

Standard: 1000 sq. ft. ground floor area. Deduct 20c per 50 sq. ft. additional area for 1927 value. Add 20c for similar deduction.

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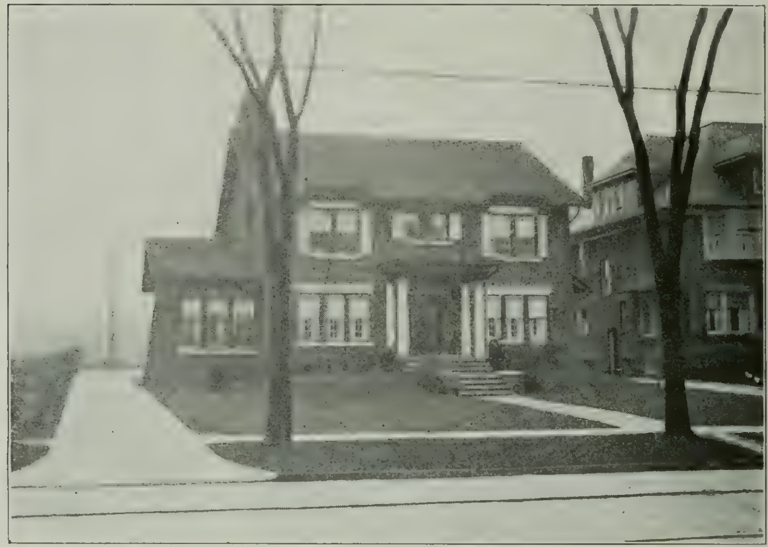
*Additional feature over preceding type.



## ONE-FAMILY DWELLING

| **SCHEDULE 1** | **CLASS 7** |
|---|---|
| Construction | Face brick exterior walls with stone trim |
| Roof | Optional except clay tile |
| Basement | Under entire building except 1 story sun room |
| Interior finish | *Hardwood finish and floors throughout. Tile floors in 2 bath rooms and lavatory |
| Third floor | Finished 3rd floor |
| Heating | Hot water, steam or vapor |
| Plumbing | *Two bath rooms and one lavatory |

| | | 2 story part | 1 story part |
|---|---|---|---|
| 1913 reproduction cost factors | Frame | $7.30 | $3.70 |
| | Brick | 8.00 | 4.10 |
| 1927 reproduction cost factors | Frame | 14.60 | 7.40 |
| | Brick | 16.00 | 8.20 |

Standard: 2 stories 1200 sq. ft. 1 story 300 sq. ft. Deduct 20c per 50 sq. ft. additional area for 1927 value .Add 20c for similar deduction.

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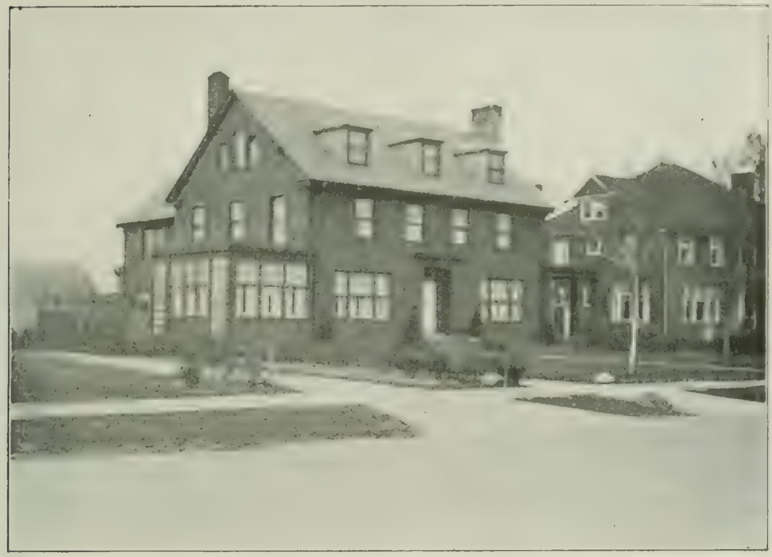
*Additional feature over preceding type.



## ONE-FAMILY DWELLING

| **SCHEDULE 1** | **CLASS 8** |
|---|---|
| Construction | Face brick walls |
| Roof | *Slate roof with 3 dormers |
| Basement | Under entire building |
| Third floor | *Two rooms finished |
| Interior finish | *Birch and white enamel finish, tile floor and wainscot in 2 bath rooms and lavatory |
| Heating | Hot water, steam or vapor |
| Plumbing | *Total 3 baths—1 lavatory |

| | |
|---|---|
| 1913 reproduction cost factors—Main section | $10.00 |
| Rear wing-garage 1st floor | 6.00 |
| 1927 reproduction cost factors—Main section | 20.00 |
| Rear wing-garage 1st floor | 12.00 |

Standard: 1416 sq. ft. ground floor area—rear wing 420 sq. ft. Deduct 20c per 50 sq. ft. additional area for 1927 value. Add 20c for similar deduction.

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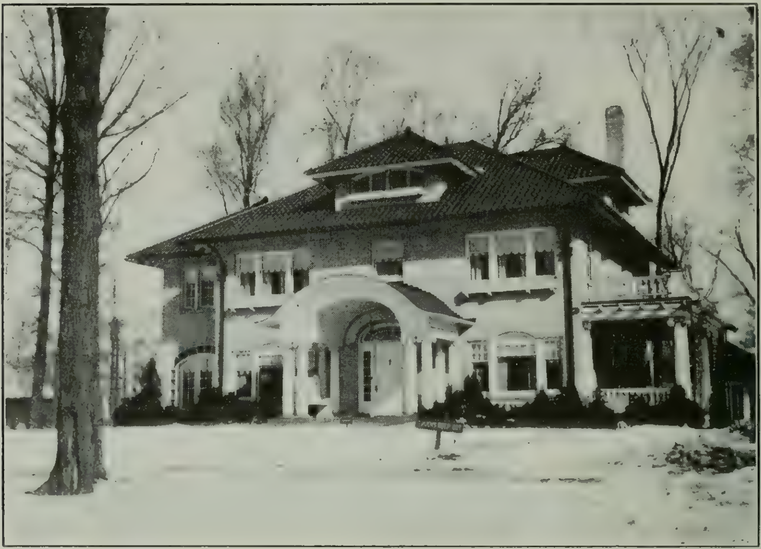
*Additional feature over preceding type.



## ONE-FAMILY DWELLING

*Highly Ornamental Exterior and Interior

| **SCHEDULE 1** | **CLASS 9** |
|---|---|
| Construction | *Face brick walls, 2 ornamental wood porches |
| Roof | *Hip tile roof—3 dormers |
| Basement | Under entire building |
| Third floor | *Finished and subdivided third floor |
| Interior finish | *Hardwood and white enamel finish—tile floor and wainscot in 3 bath rooms |
| Heating | Hot water, steam or vapor |
| Plumbing | *Three baths and 2 lavatories |

| | |
|---|---|
| 1913 reproduction cost factors | |
| Frame | $10.90 |
| Brick | 12.00 |
| 1927 reproduction cost factors | |
| Frame | $21.80 |
| Brick | 24.00 |

Standard: 1700 sq. ft. ground floor area.

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*Additional feature over preceding type.

ONE-FAMILY DWELLING

*High Class Construction

| **SCHEDULE 1** | **CLASS 10** |
|---|---|
| Construction | Face brick walls with carved stone trim |
| Roof | Slate |
| Basement | Basement under entire building |
| Third floor | Finished and subdivided |
| Interior finish | *High class detailed woodwork, 4 mantels and other built-in features, tiled bath |
| Heating | Hot water, steam or vapor |
| Plumbing | Four bath rooms and 2 lavatories |

| | |
|---|---|
| 1913 reproduction cost factors main part | $15.00 |
| Attached garage—rooms 2nd floor | 9.00 |
| One story section | 5.00 |
| 1927 reproduction cost factors main part | 30.00 |
| Attached garage—rooms 2nd floor | 18.00 |
| One story section | 10.00 |

Standard: Main part 2945 sq. ft., attached garage—rooms 2nd floor 529 sq. ft., one story 260 sq. ft. ground floor area.

---

*Additional feature over preceding type.

## ONE-FAMILY DWELLING

High Class Construction

| SCHEDULE 1 | CLASS 11 | |
|---|---|---|
| Construction | *Exterior walls of stone and stucco on tile, stone base, cornice and exterior trim throughout. | |
| Roof | *Slate and copper | |
| Basement | *Basement under entire house subdivided by brick partition walls | |
| Third floor | One-half of 3rd floor finished for storage—balance unfinished | |
| Interior | *Twenty-three rooms and 5 bath rooms, 2 ice machines, 1 elevator—4 mantels. Costly detailed interior finish | |
| Heating | Hot water, steam or vapor | |
| Plumbing | *Five bath rooms, 4 lavatories | |
| 1913 reproduction cost factors | Main part | $22.00 |
| | Service section & garage | 12.00 |
| 1927 reproduction cost factors | Main part | 44.00 |
| | Service section & garage | 24.00 |

Standard: Main part 3022 sq. ft., attached garage—rooms 2nd floor 2085 sq. ft., ground floor area.

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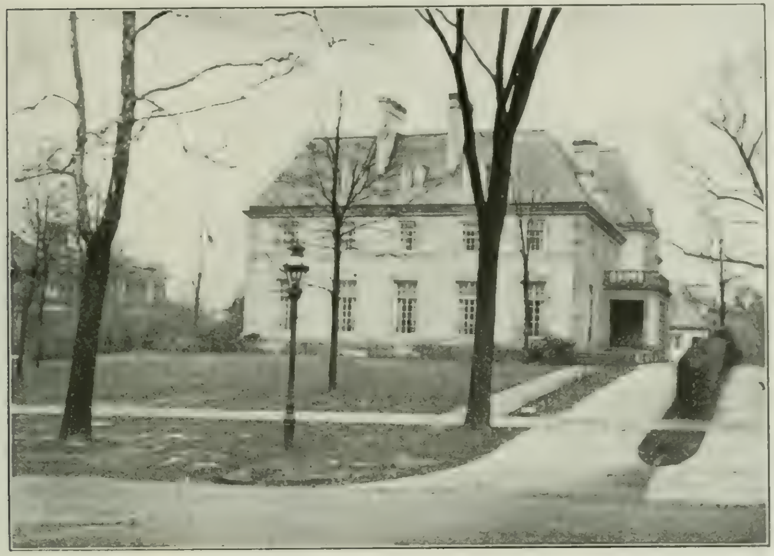
*Additional feature over preceding type.



## ONE-FAMILY DWELLING

High Class Construction

| **SCHEDULE 1** | **CLASS 12** |
|---|---|
| Construction | Stucco on tile—with detailed stone trim |
| Roof | Slate |
| Interior | *Twenty-four rooms. High class detailed interior work including 9 mantels—1 elevator |
| Third floor | *Six maids' rooms—1 bathroom and 2 large storage rooms |
| Basement | *Under entire building with all rooms plastered and finished |
| Heating | Hot water, steam or vapor |
| Plumbing | *Of high quality—6 bathrooms and 2 lavatories |

| | |
|---|---|
| 1913 reproduction cost factor | $27.00 |
| 1927 reproduction cost factor | 54.00 |

Standard: 4149 sq. ft. ground floor area.

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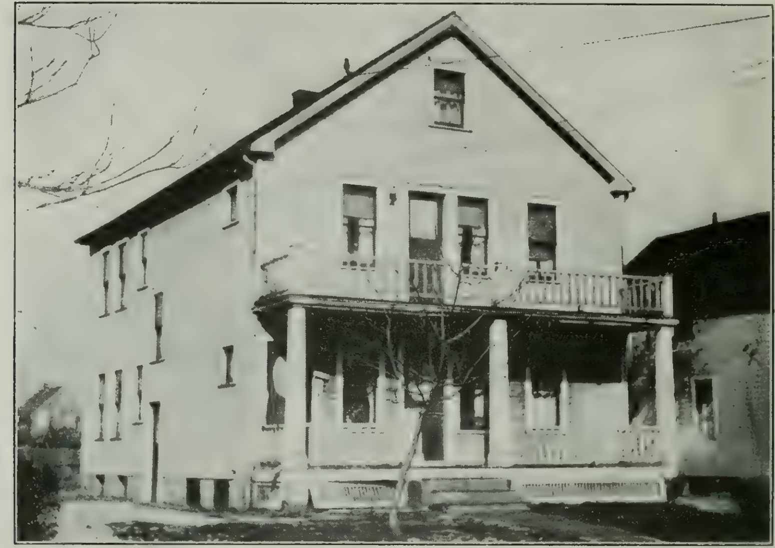
*Additional feature over preceding type.



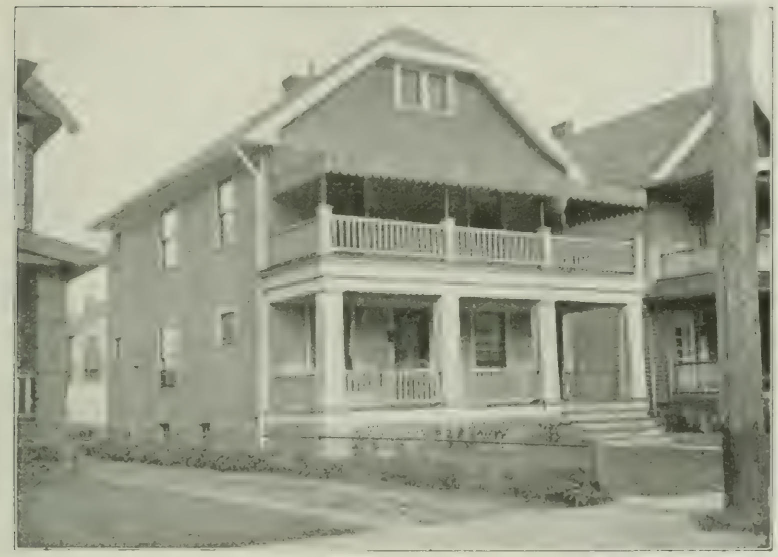
## TWO-FAMILY DWELLING

Cheap Construction

| **SCHEDULE 1-A** | **CLASS 1** |
|---|---|
| Walls | Drop siding |
| Roof | Shingles |
| Basement | Under entire building, block foundation |
| Third floor | Unfinished |
| Projections | None except porch |
| Interior finish | Pine finish and floors |
| Heating | Stoves |
| Plumbing | One bath per suite |
| | See page 330 for deviations. |

| | | |
|---|---|---|
| 1913 reproduction cost factors | Frame | $3.00 |
| | Brick | 3.30 |
| 1927 reproduction cost factors | Frame | 6.00 |
| | Brick | 6.60 |

Standard: 900 sq. ft. ground floor area. Deduct 20c per 50 sq. ft. additional area for 1927 value. Add 20c for similar deduction.



## TWO-FAMILY DWELLING

Plain Construction

| **SCHEDULE 1-A** | **CLASS 2** |
|---|---|
| Walls | *Lap siding |
| Roof | Shingles |
| Foundation | Cement block foundation |
| Basement | Under entire building |
| Third floor | Unfinished |
| Projections | None except porch |
| Interior finish | Pine—wood floor in bath rooms |
| Heating | *Two hot air furnaces |
| Plumbing | One bath per suite |

| | | |
|---|---|---|
| 1913 reproduction cost factors | Frame | $3.60 |
| | Brick | 4.00 |
| 1927 reproduction cost factors | Frame | 7.20 |
| | Brick | 8.00 |

Standard: 1000 sq. ft. ground floor area. Deduct 20c per 50 sq. ft. additional area for 1927 value. Add 20c for similar deduction.

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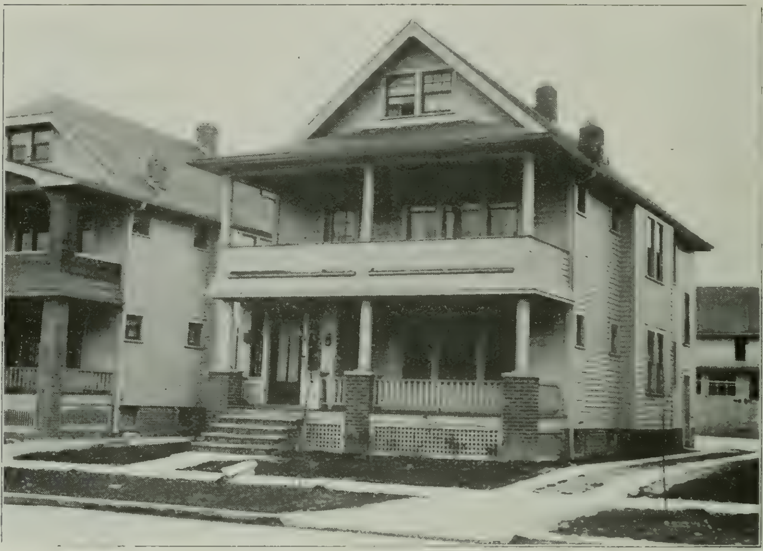
*Additional feature over preceding type. See page 330 for deviations.



## TWO-FAMILY DWELLING

A Prevailing Type in Cleveland

| SCHEDULE 1-A | CLASS 3 |
|---|---|
| Walls | Narrow siding |
| Roof | Optional except tile |
| Basement | *Full basement, brick foundation |
| Third floor | Unfinished |
| Projections | *One—2-story bay and porch |
| Interior finish | *Hardwood and white enamel, hardwood floor throughout including bath rooms |
| Heating | Two hot air furnaces |
| Plumbing | One bath room per suite |

| | | |
|---|---|---|
| 1913 reproduction cost factors | Frame | $4.00 |
| | Brick | 4.40 |
| 1927 reproduction cost factors | Frame | 8.00 |
| | Brick | 8.80 |

Standard: 1000 sq. ft. ground floor area. Deduct 20c per 50 sq. ft. additional area for 1927 value. Add 20c for similar deduction.

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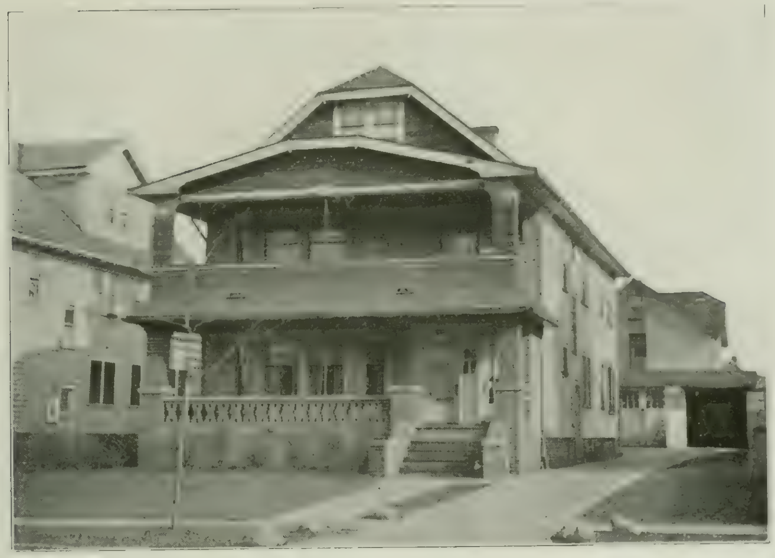
*Additional feature over preceding type. See page 330 for deviations.



TWO-FAMILY DWELLING

| SCHEDULE 1-A | CLASS 4 |
|---|---|
| Walls | Narrow siding |
| Roof | Optional except tile |
| Basement | Under entire building |
| Third floor | *Finished, two rooms |
| Projections | *Four bay windows and dormers—brick porch—outside chimney |
| Interior finish | *Hardwood or white enamel—2 mantels—tile floor in baths |
| Heating | Hot air |
| Plumbing | One bath room per suite |

| | | |
|---|---|---|
| 1913 reproduction cost factors | Frame | $4.80 |
| | Brick | 5.30 |
| 1927 reproduction cost factors | Frame | 9.60 |
| | Brick | 10.60 |

Standard: 1000 to 1300 sq. ft. ground floor area.

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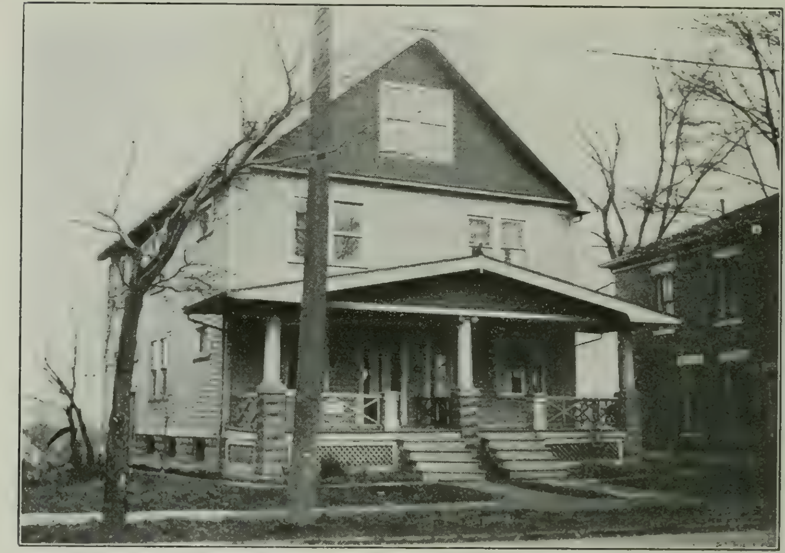
*Additional feature over preceding type. See page 330 for deviations.



DOUBLE DWELLING

| SCHEDULE 1-B | CLASS 1 | |
|---|---|---|
| Walls | Lap siding | |
| Roof | Shingle | |
| Foundation | Cement block | |
| Basement | Under entire building | |
| Third floor | Unfinished | |
| Projections | None | |
| Finish | Pine—no built-in features—wood floor in bath rooms | |
| Heating | Two hot air furnaces | |
| Plumbing | One bath room per suite | |
| 1913 reproduction cost factors | Frame | $3.60 |
| | Brick | 4.00 |
| 1927 reproduction cost factors | Frame | 7.20 |
| | Brick | 8.00 |

See page 330 for deviations.

Standard: 1000 sq. ft. ground floor area. Deduct 20c per 50 sq. ft. additional area for 1927 value. Add 20c for similar deduction.

## DOUBLE DWELLING

| SCHEDULE 1-B | CLASS 2 |
|---|---|
| Walls | Lap siding |
| Roof | *Optional except tile |
| Foundation | *Brick or stone |
| Basement | Under entire building |
| Third floor | Unfinished |
| Projections | *Four bay windows—2 dormers |
| Interior finish | *Hardwood and white enamel finish, hardwood floors, wood floor in bath rooms |
| Heating | Two hot air furnaces |
| Plumbing | One bath room per suite |

| | | |
|---|---|---|
| 1913 reproduction cost factors | Frame | $ 4.50 |
| | Brick | 5.00 |
| 1927 reproduction cost factors | Frame | 9.00 |
| | Brick | 10.00 |

See page 330 for deviations.

Standard: 1200 sq. ft. ground floor area. Deduct 20c per 50 sq. ft. additional area for 1927 value. Add 20c for similar deduction.

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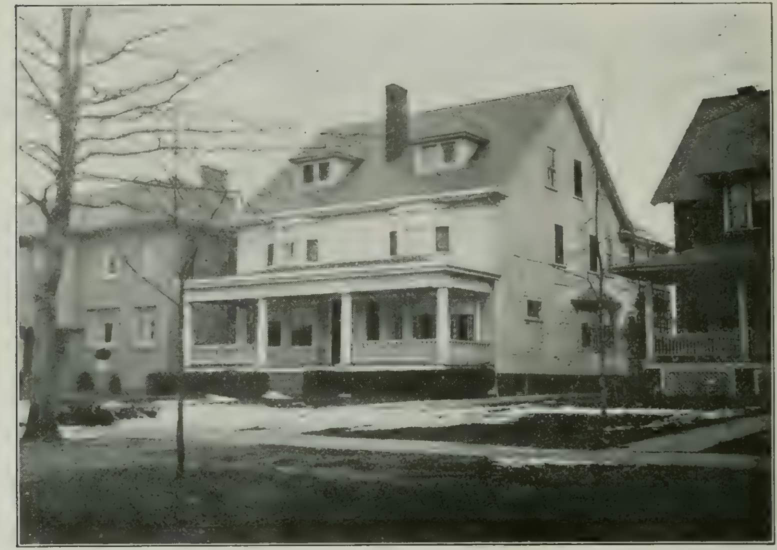
*Additional feature over preceding type.



## DOUBLE DWELLING

| SCHEDULE 1-B | CLASS 3 |
|---|---|
| Walls | Press brick or lap siding |
| Roof | Optional except tile |
| Basement | Under entire building |
| Third floor | *Plastered—undivided area |
| Projections | *Four bay windows—2 dormers—10-foot porch |
| Interior finish | *Hardwood or white enamel, 2 mantels and built-in features, tile floors in baths |
| Heating | *Hot water, steam or vapor |
| Plumbing | *One bath room and lavatory per suite |

| | | |
|---|---|---|
| 1913 reproduction cost factors | Frame | $ 6.00 |
| | Brick | 6.60 |
| 1927 reproduction cost factors | Frame | 12.00 |
| | Brick | 13.20 |

Standard: 1400 sq. ft. ground floor area. Deduct 20c per 50 sq. ft. additional area for 1927 value. Add 20c for similar deduction.

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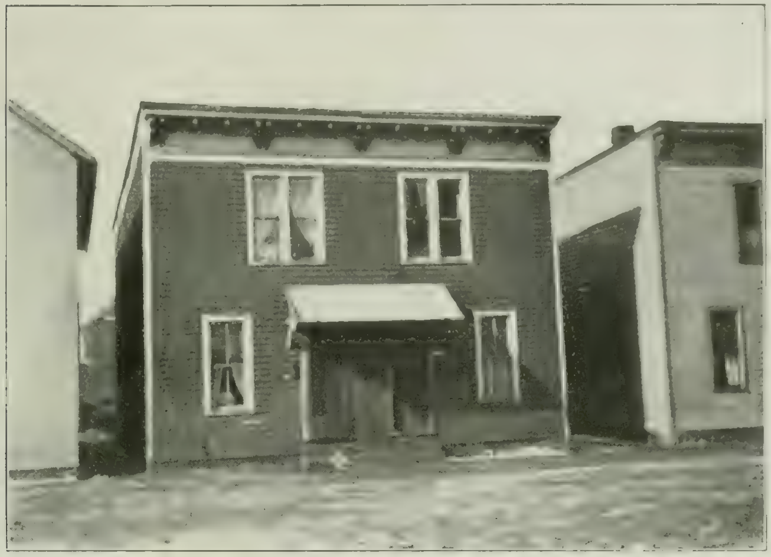
*Additional feature over preceding type. See page 330 for deviations.



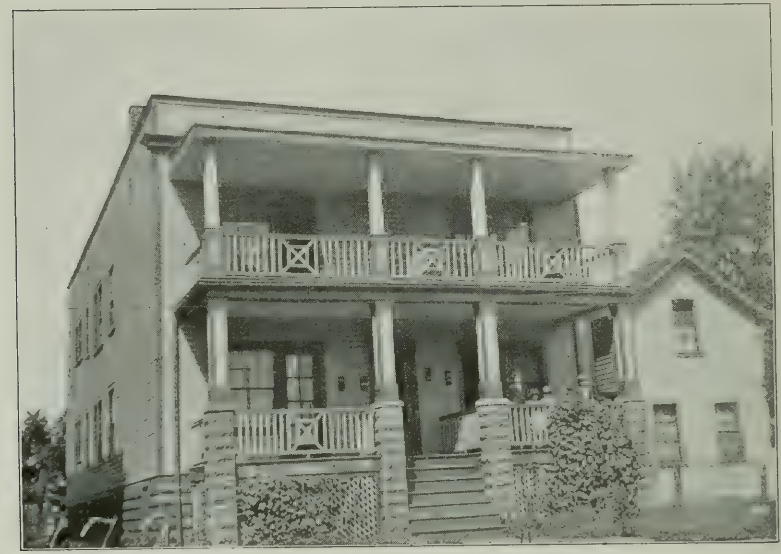
CHEAP APARTMENT HOUSE

Simple Construction

| **SCHEDULE 2** | **CLASS 1** |
|---|---|
| Walls | Drop siding |
| Roof | Shingle gable or flat roof |
| Basement | Small cellar |
| Third floor | None |
| Interior finish | Pine |
| Heating | Stoves |
| Plumbing | Kitchen sink and toilet per suite |

| | | 2 story | 3 story |
|---|---|---|---|
| 1913 reproduction cost factors | Frame | $1.80 | $2.60 |
| | Brick | 2.00 | 2.90 |
| 1927 reproduction cost factors | Frame | 3.60 | 5.20 |
| | Brick | 4.00 | 5.80 |

Standard: 1500 to 3000 sq. ft. ground floor area.



## APARTMENT HOUSE

4 Suites

| SCHEDULE 2 | CLASS 2 |
|---|---|
| Walls | *Narrow siding |
| Foundation | Cement block |
| Roof | Shingle gable or flat roof |
| Basement | *Under entire building |
| Third floor | None |
| Interior finish | Pine floors and trim—wood floors in bath rooms |
| Heating | Stoves |
| Plumbing | *One bath per suite |

| | | 2-story | 3 story |
|---|---|---|---|
| 1913 reproduction cost factors | Frame | $2.70 | $3.80 |
| | Brick | 3.00 | 4.20 |
| 1927 reproduction cost factors | Frame | 5.40 | 7.60 |
| | Brick | 6.00 | 8.40 |

Standard: 1500 to 3000 sq. ft. ground floor area.

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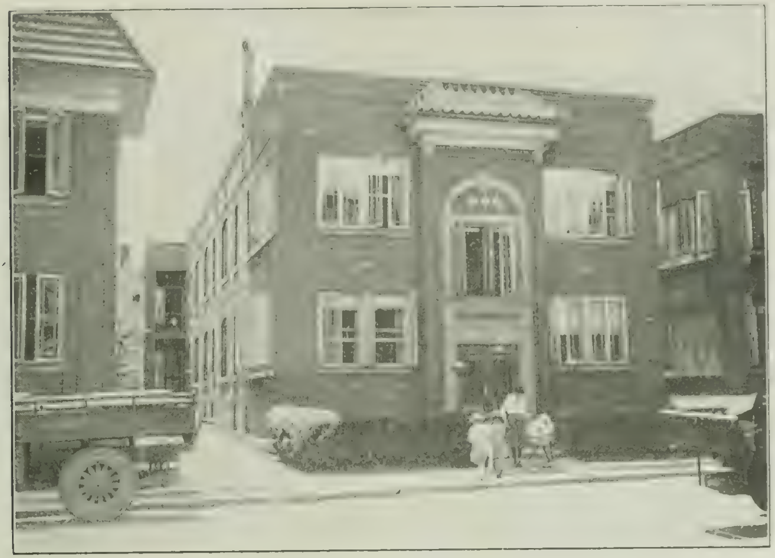
*Additional feature over preceding type.



## APARTMENT HOUSE

Six 5-Room Suites

| **SCHEDULE 2** | **CLASS 3** |
|---|---|
| Walls | Face brick front—other walls common brick |
| Roof | Flat roof |
| Basement | Under entire building—no living rooms in basement |
| Interior finish | *Pine finish hardwood floors. No mantel or other built-in features. Wood floors in bath room. |
| Heating | *Hot air system |
| Plumbing | One bath per suite |

| | 2-story | 3-story |
|---|---|---|
| 1913 reproduction cost factors | $3.50 | $ 5.00 |
| 1927 reproduction cost factors | 7.00 | 10.00 |

Standard: 4000 to 6000 sq. ft. ground floor area.

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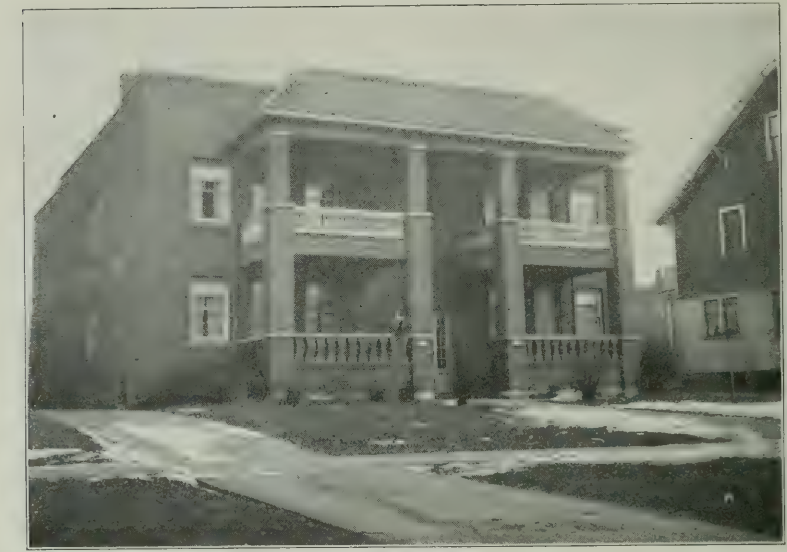
*Additional feature over preceding type.



APARTMENT HOUSE

Four 5-room Suites

| **SCHEDULE 2** | **CLASS 4** |
|---|---|
| Walls | Face brick front—other walls common brick |
| Basement | Under entire building—no living rooms in basement |
| Projections | *Two story brick porches |
| Interior finish | *Hardwood and white enamel finish—1 mantel per suite—wood floor in bath rooms |
| Heating | Four hot air furnaces |
| Plumbing | One bath per suite |

| | |
|---|---|
| 1913 reproduction cost factor | $4.00 |
| 1927 reproduction cost factor | 8.00 |

Standard: 2000 to 3000 sq. ft. ground floor area.

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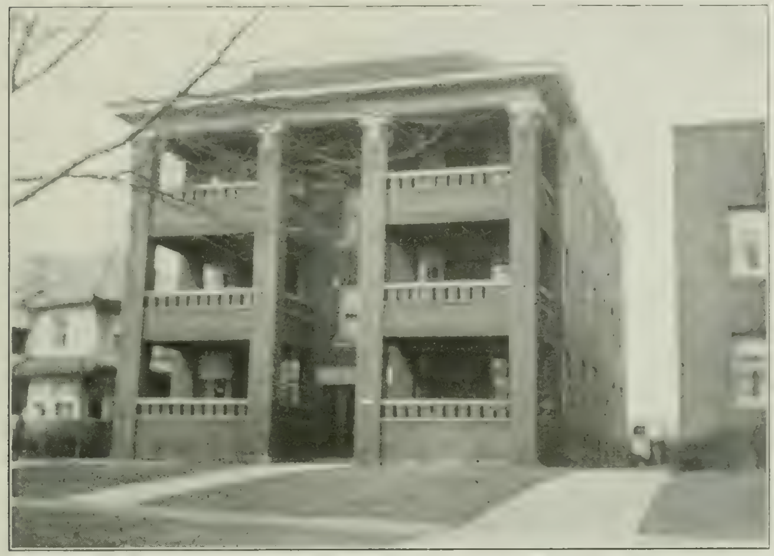
*Additional feature over preceding type.



## APARTMENT HOUSE

Six 5-Room Suites

**SCHEDULE 2** **CLASS 5**

| | |
|---|---|
| Walls | Face brick front—other walls common brick |
| Basement | *Under entire building—janitor's rooms in basement |
| Projections | Brick porches |
| Interior finish | Hardwood or white enamel—wood floor in bath rooms—1 mantel per suite |
| Heating | *Steam heat |
| Plumbing | One bath room per suite |

| | 2-story | 3-story |
|---|---|---|
| 1913 reproduction cost factors | $ 5.00 | $ 6.80 |
| 1927 reproduction cost factors | 10.00 | 13.60 |

Standard: 2000 to 3000 sq. ft. ground floor area.

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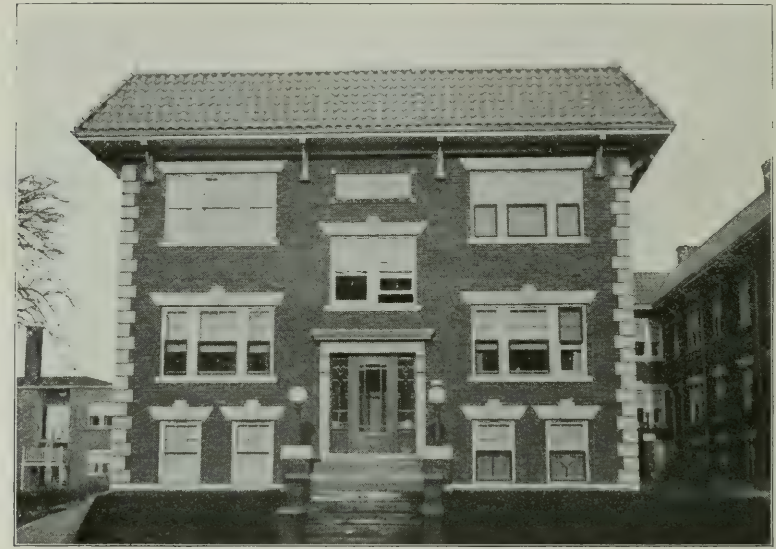
*Additional feature over preceding type.



## APARTMENT HOUSE

Ten Suites of 5 Rooms Each

| **SCHEDULE 2** | **CLASS 6** |
|---|---|
| Walls | *Face brick front and side |
| Roof | Gravel roof—hip tile front and one entire side |
| Basement | *Full basement—two 5-room suites |
| Interior finish | *Hardwood and white enamel with 1 mantel and one in-a-door bed per suite, hardwood floors—tile floor in bath rooms |
| Heating | Steam heat |
| Plumbing | One bath room per suite |

| | 2-stories | 3-stories |
|---|---|---|
| 1913 reproduction cost factors | $ 5.30 | $ 7.00 |
| 1927 reproduction cost factors | 10.60 | 14.00 |

Standard: 4000 to 6000 sq. ft. ground floor area.

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*Additional feature over preceding type.

## APARTMENT HOUSE

Three and Four Room Suites

| **SCHEDULE 2** | **CLASS 7** |
|---|---|
| Construction | Face brick front walls—non-fireproof floors |
| Basement | English basement—several suites |
| Interior finish | Hardwood finish and floors—tile floor in bath rooms—in-a-door beds |
| Heating | Steam |
| Plumbing | One bath per suite |

| | 2-story | 3-story |
|---|---|---|
| 1913 reproduction cost factors | $ 5.50 | $ 7.20 |
| 1927 reproduction cost factors | 11.00 | 14.40 |

**Standard: 4000 to 6000 sq. ft. ground floor area.**

APARTMENT HOUSE

Seventeen Suites and Two Stores

| SCHEDULE 2 | CLASS 8 |
|---|---|
| Construction | Face brick front and side walls—non-fireproof floors |
| Occupancy of building | Stores and apartment suites of 3 and 4 rooms |
| Plumbing | One bath per suite |
| Heating | Steam |
| Interior finish | Hardwood and white enamel finish, and hardwood floors—tile floors in bath rooms, in-a-door beds—no mantels |

| | 2 stories | 3 stories | |
|---|---|---|---|
| 1913 reproduction cost factors | $ 5.30 | $ 7.30 | per square foot |
| | | .16 | per cubic foot |
| 1927 reproduction cost factors | 10.60 | 14.60 | per square foot |
| | | .32 | per cubic foot |

Standard: 4000 to 6000 sq. ft., ground floor area.

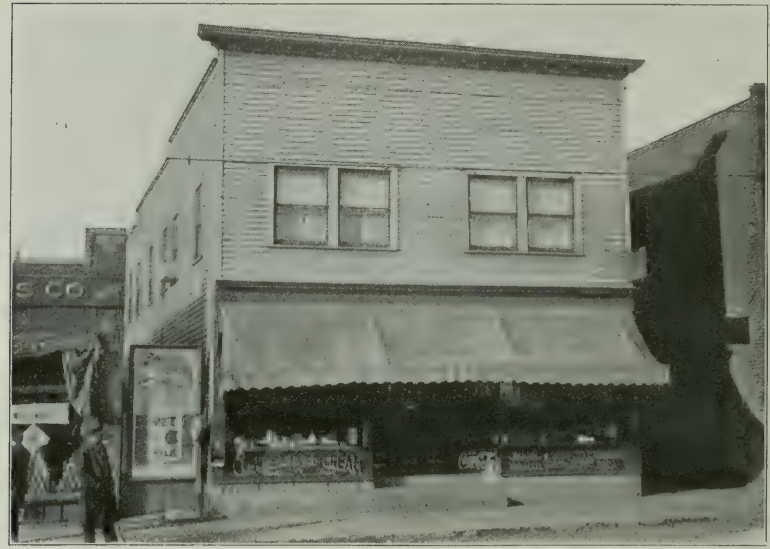
APARTMENT HOUSE

Three Stories and English Basement, Thirty-six Two-room Suites

| **SCHEDULE 2** | **CLASS 9** |
|---|---|
| Construction | Face brick front with stone trim.<br>Non-fireproof floors—tile floor in bath rooms—ten 2-room suites on each upper floor and six 2-room suites in basement. |
| Interior finish | Hardwood floors and finish—tile floors in bath rooms, in-a-door beds. |
| Heating | Steam heat |
| Plumbing | Thirty-six baths |

| | 2 stories | 3 stories |
|---|---|---|
| 1913 reproduction cost factors | $ 5.90 | $ 7.90 per square foot<br>.19 per cubic foot |
| 1927 reproduction cost factors | 11.80 | 15.80 per square foot<br>.38 per cubic foot |

Standard: 5000 sq. ft. ground floor area.



## STORES AND APARTMENTS

Simple Construction

**SCHEDULE 3** **CLASS 1**

| | |
|---|---|
| Walls | If frame—drop siding<br>If brick—face brick on front only |
| Roof | Gable, shingle or flat roof |
| Basement | Small cellar |
| Attic | None |
| Interior finish | Pine |
| Heating | Stoves |
| Plumbing | No plumbing except water closet and kitchen sinks |

| | | 2 stories | 3 stories |
|---|---|---|---|
| 1913 reproduction cost factors | Frame | $2.40 | $3.50 |
| | Brick | 2.70 | 3.90 |
| 1927 reproduction cost factors | Frame | 4.80 | 7.00 |
| | Brick | 5.40 | 7.80 |

Standard: 1500 to 4000 sq. ft. ground floor area.

## STORES AND APARTMENTS

Cheap Construction

| **SCHEDULE 3** | **CLASS 2** |
|---|---|
| Walls | Face brick front wall, other walls, common brick |
| Roof | Flat roof |
| Basement | *Under entire building |
| Interior finish | Pine in stores and living rooms |
| Heating | Gas stoves |
| Plumbing | *One bath per suite—2 fixtures for each store |

| | 2 stories | 3 stories |
|---|---|---|
| 1913 reproduction cost factors | $3.20 | $ 5.00 |
| 1927 reproduction cost factors | 6.40 | 10.00 |

Standard: 2000 to 5000 sq. ft. ground floor area.

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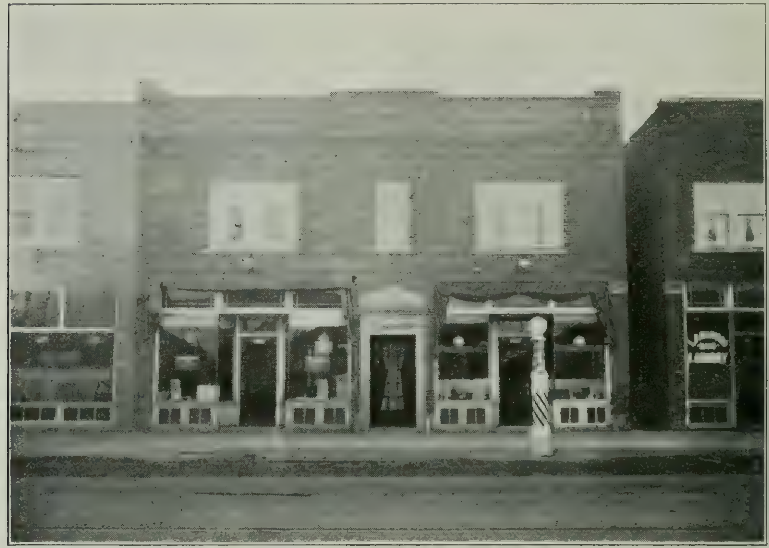
*Additional feature over preceding type.



## STORES AND APARTMENTS

Occupying Interior Lot

| **SCHEDULE 3** | **CLASS 3** |
|---|---|
| Walls | Press brick front, other walls common brick |
| Roof | Flat roof |
| Basement | Under entire building |
| Interior finish | *Hardwood finish and floors in living rooms—pine finish and hardwood floors in stores |
| Heating | *Hot air system |
| Plumbing | One bath for each suite—2 fixtures for each store |

| | 2 stories | 3 stories |
|---|---|---|
| 1913 reproduction cost factors | $4.00 | $ 5.80 |
| 1927 reproduction cost factors | 8.00 | 11.60 |

Standard: 2500 to 5000 sq. ft. ground floor area.

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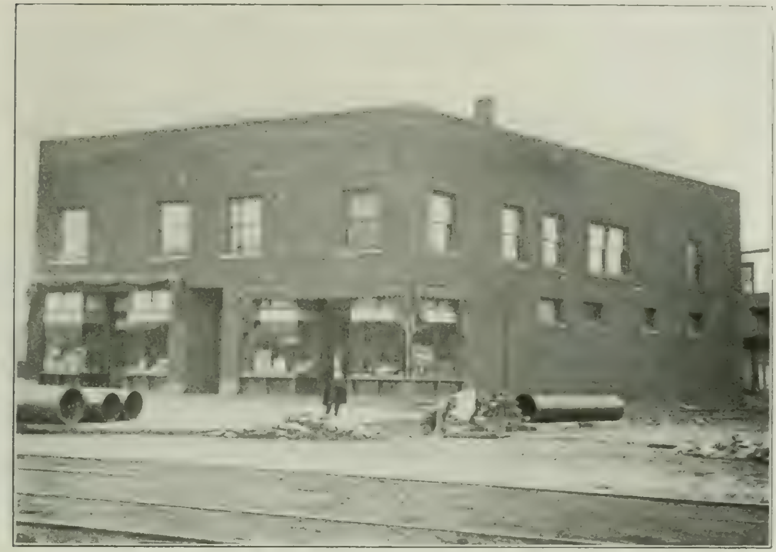
*Additional feature over preceding type.



## STORES AND APARTMENTS

| **SCHEDULE 3** | **CLASS 4** |
|---|---|
| Walls | *Face brick front and one side wall |
| Roof | Flat roof |
| Basement | Full basement |
| Interior finish | *Hardwood floors and finish in living rooms—tile floor in bath rooms—pine finish and hardwood floors in store |
| Heating | *Hot water, steam or vapor |
| Plumbing | One bath per suite—2 fixtures for each store |

| | 2 stories | 3 stories |
|---|---|---|
| 1913 reproduction cost factors | $4.50 | $ 6.50 |
| 1927 reproduction cost factors | 9.00 | 13.00 |

Standard: 2000 to 5000 sq. ft. ground floor area.

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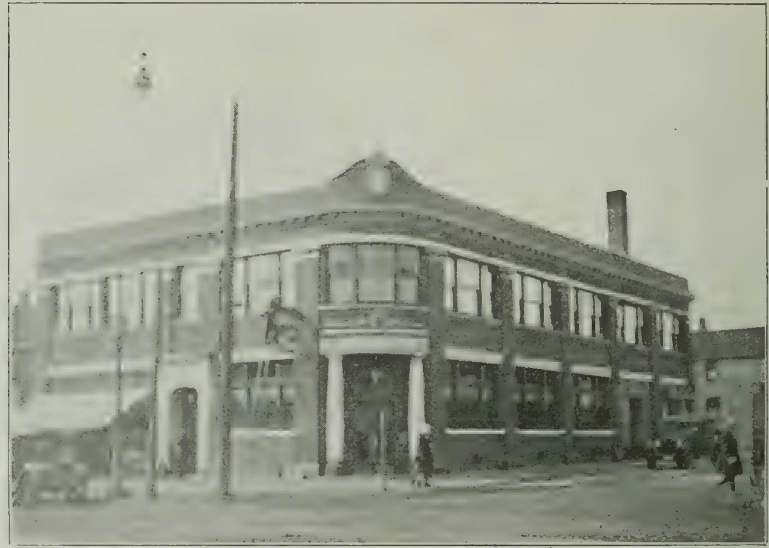
*Additional feature over preceding type.



STORE AND OFFICE BUILDING

| **SCHEDULE 3** | **CLASS 5** |
|---|---|
| Walls | *Face brick exterior front and one side wall with ornamental terra-cotta trim |
| Roof | Flat roof |
| Basement | Under entire building |
| First floor | *Used for mercantile and banking purposes |
| Second story | Nine offices and one 2-room suite |
| Interior finish | *Hardwood throughout. Composition floor in banking room |
| Heating | Steam |
| Plumbing | Total 26 fixtures |

| | |
|---|---|
| 1913 reproduction cost factor | $ 5.50 per sq. ft. |
| 1927 reproduction cost factor | 11.00 per sq. ft. |

Standard: 5226 sq. ft. ground floor area.

---

*Additional feature over preceding type.

STORES AND RESTAURANT

High Class Construction

| **SCHEDULE 3** | **CLASS 6** |
|---|---|
| Construction | *Size of building 150 x 60 brick walls—stucco on brick front non-fireproof floors and roof—large amount of interior marble and tile work |
| Basement | Full basement used for storage space |
| First story | *Eight store rooms, tile partitions between stores |
| Second story | *Restaurant—dining room and kitchen—performers stage at one end of dining room |
| Heating | Steam heat |
| Plumbing | Two fixtures for each store—10 fixtures second story |
| 1913 reproduction cost factor | $ 7.00 per sq. ft. |
| 1927 reproduction cost factor | 14.00 per sq. ft. |

Standard: 9000 sq. ft. ground floor area.

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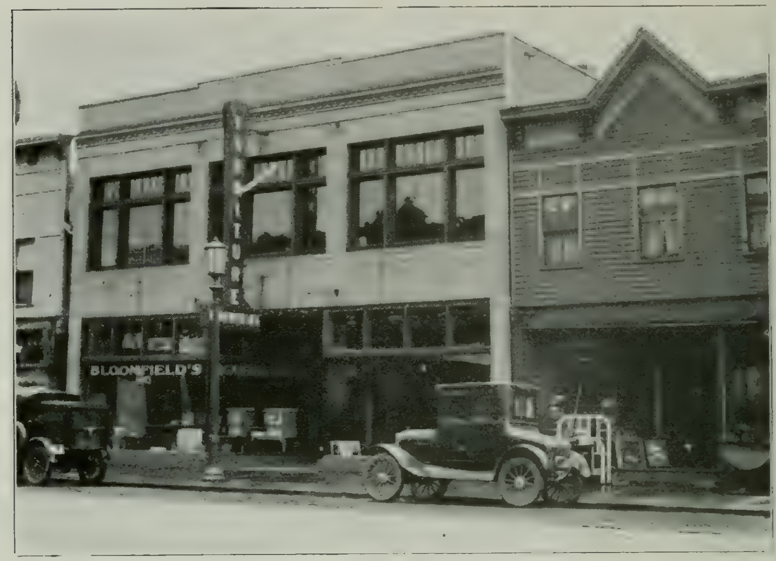
*Additional feature over preceding type.



## TWO-STORY STORE BUILDING

Undivided Area Second Floor

| **SCHEDULE 3** | **CLASS 7** |
|---|---|
| Construction | Face brick front, other walls common brick<br>Flat roof, joist construction throughout |
| Basement | Under entire building |
| First story | Plastered walls, undivided floor space |
| Second story | Plastered walls, undivided floor space |
| Floors | Hardwood floors |
| Heating | Hot air system |
| Plumbing | Two plumbing fixtures |

| | |
|---|---|
| 1913 reproduction cost factor | $3.00 per sq. ft. |
| 1927 reproduction cost factor | 6.00 per sq. ft. |

Standard: 4000 to 6000 sq. ft. ground floor area.

## ONE-STORY STORE BUILDING

Cheaply Constructed

| SCHEDULE 4 | CLASS 1 | |
|---|---|---|
| Walls | If brick—face brick on front only —if frame—drop siding | |
| Roof | Flat roof | |
| Basement | No basement | |
| Heating | Stove heat | |
| Plumbing | Two fixtures per store | |
| 1913 reproduction cost factors | Frame | $1.10 |
| | Brick | 1.20 |
| 1927 reproduction cost factors | Frame | 2.20 |
| | Brick | 2.40 |

Standard: ground floor area optional.

## ONE-STORY STORE BUILDING

*Simple Construction

**SCHEDULE 4** **CLASS 2**

| | |
|---|---|
| Walls | Brick—face brick on front without ornamentation |
| Roof | Flat roof |
| Basement | *Under entire building |
| Interior finish | Pine |
| Floors | Maple |
| Heating | Gas stoves |
| Plumbing | Two fixtures for each store |

| | | Not over 3 stores | 5 or more stores |
|---|---|---|---|
| 1913 reproduction cost factors | Brick | $1.80 | $1.20 |
| 1927 reproduction cost factors | Brick | 3.60 | 2.40 |

Standard: square foot ground floor area prices.

---

*Additional feature over preceding type.

## ONE-STORY STORE BUILDING

*Well Constructed

| SCHEDULE 4 | CLASS 3 |
|---|---|
| Walls | Face brick front, other walls common brick |
| Roof | Flat roof |
| Basement | Under entire building |
| Interior finish | Pine |
| Floors | Maple |
| Heating | *One furnace per store |
| Plumbing | Two fixtures for each store |

| | | Not over 3 stores | 5 or more stores |
|---|---|---|---|
| 1913 reproduction cost factors | Brick | $2.10 | $1.60 |
| 1927 reproduction cost factors | Brick | 4.20 | 3.20 |

Standard: 4000 to 6000 sq. ft. ground floor area.

## ONE-STORY STORE BUILDING

*High Class

| **SCHEDULE 4** | **CLASS 4** |
|---|---|
| Walls | *Brick—ornamental front and side elevation |
| Roof | Flat roof |
| Basement | Full Basement |
| Interior finish | Pine |
| Floors | Maple floors |
| Heating | One furnace for each store |
| Plumbing | Two fixtures for each store |

| | Not over 3 stores | 5 or more stores |
|---|---|---|
| 1913 reproduction cost factors | $2.40 | $2.00 |
| 1927 reproduction cost factors | 4.80 | 4.00 |

Standard: Square foot ground floor area prices.

---

*Additional feature over preceding type.

## DEPARTMENT STORE BUILDING

| | |
|---|---|
| Construction | Six-story and basement, steel frame, with two ornamental terra cotta facades—designed to carry two additional stories |
| Occupancy | Entire six upper floors and basement with the exception of space for exhibition hall and playground used for merchandising |
| Sprinkler system | Sprinkler system throughout |
| Floors | First story has marble floor, other stories have hardwood floor |

| | |
|---|---|
| 1913 reproduction cost factor | 19c per cubic foot |
| 1927 reproduction cost factor | 38c per cubic foot |

Standard: Cubage 12,680,000 feet.

DEPARTMENT STORE BUILDING

| | |
|---|---|
| Construction | Steel frame—fireproof floors, ornamental terra cotta front—three elevators — building equipped with sprinkler system |
| Basement | Under entire building |
| First to fifth floors | Used for mercantile purposes |
| Heating | Steam |
| Plumbing | A large amount of plumbing on each floor |

| | |
|---|---|
| 1913 reproduction cost factor | 22c per cubic foot |
| 1927 reproduction cost factor | 44c per cubic foot |

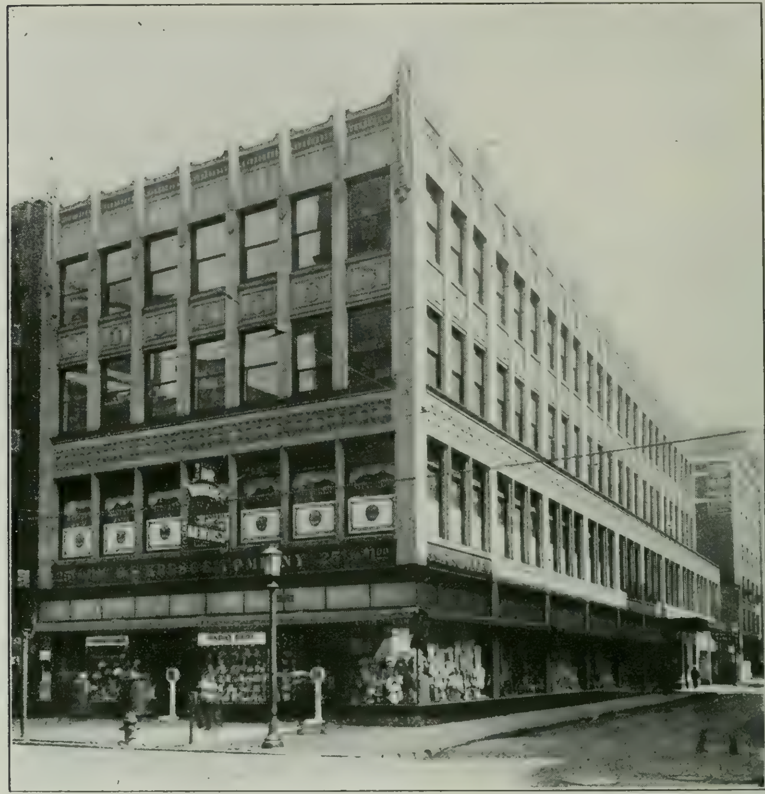
Standard: Cubage 1,491,057 feet.

DEPARTMENT STORE BUILDING

| | |
|---|---|
| Construction | Five-story and basement, steel frame, terra cotta front and side elevation—High class construction, large amount of window display space |
| Basement | Full basement |
| First to fifth floors | Undivided area for merchandising purposes |
| Elevators | Nine elevators |
| Plumbing | Nine toilet rooms containing 100 plumbing fixtures |

| | |
|---|---|
| 1913 reproduction cost factor | 21c per cu. ft. |
| 1927 reproduction cost factor | 42c per cu. ft. |

Cubage 4,129,000 feet.

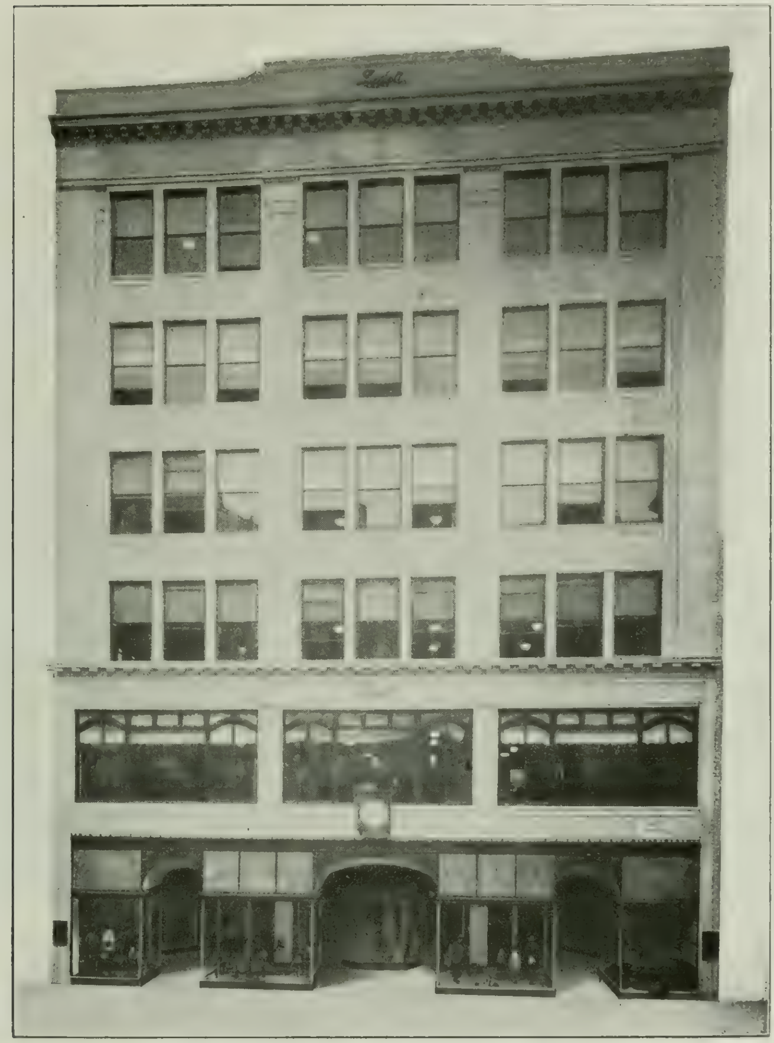


STORE BUILDING

| | |
|---|---|
| Construction | Steel frame, fireproof floors, face brick front and side elevation, with terra cotta trim |
| Basement | Finished basement used for mercantile purposes |
| First floor | Undivided area for mercantile use |
| Second floor | Devoted to office space |
| Third and fourth floors | Undivided floor area |
| Heating | Steam heat |
| Plumbing | Moderate amount of plumbing |

| | |
|---|---|
| 1913 reproduction cost factor | 23c per cubic foot |
| 1927 reproduction cost factor | 46c per cubic foot |

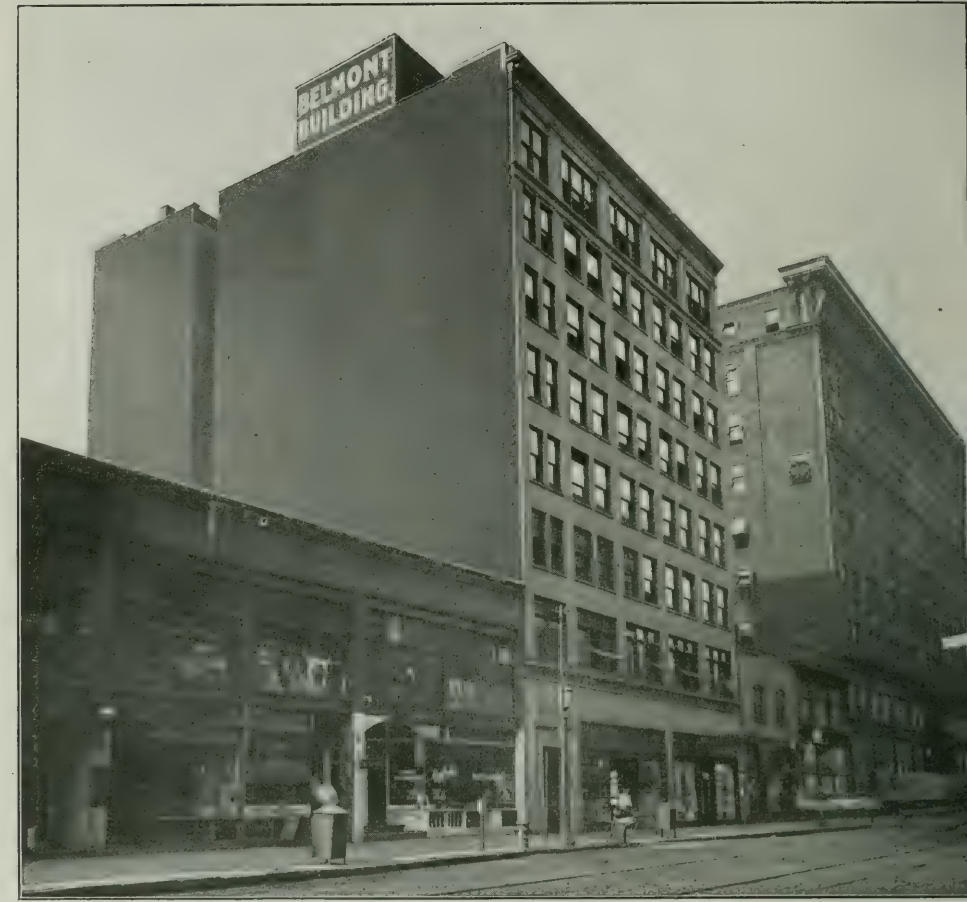
Standard: Cubage 995,929 feet.



SPECIALTY STORE BUILDING

| | |
|---|---|
| Construction | Steel frame, fireproof floors—terra cotta front, undivided floor area used exclusively for merchandising—first has marble floors, others cement finish; three elevators; no sprinklers |
| 1913 reproduction cost factor | 20c per cubic foot |
| 1927 reproduction cost factor | 40c per cubic foot |

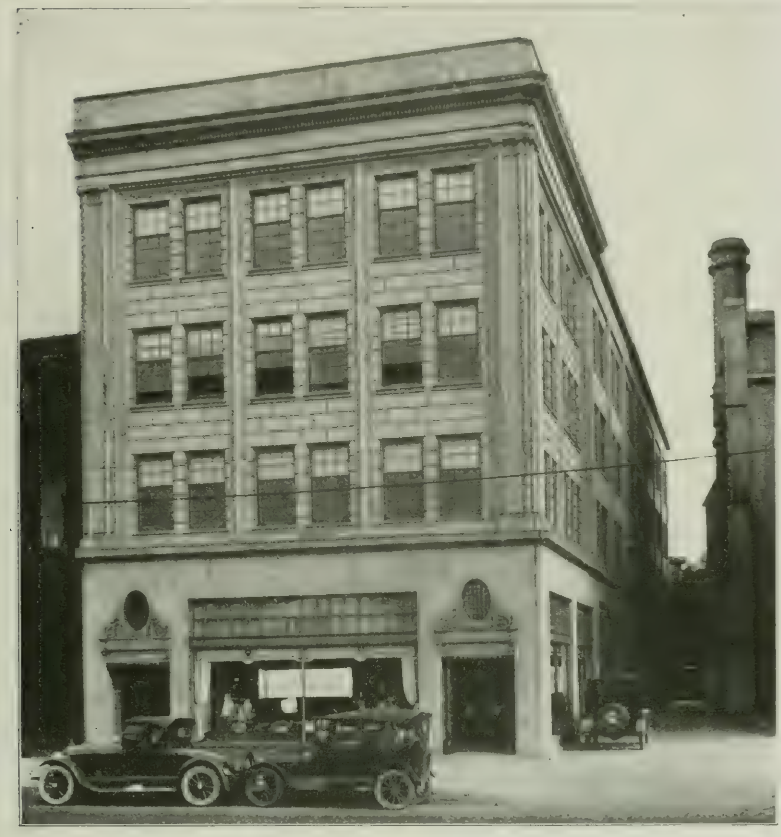
Cubage 1,135,386 feet.



STORE AND OFFICE BUILDING

| | |
|---|---|
| Construction | Reinforced concrete frame and floors—two face brick street elevations—interior finish is of plain oak, two elevators; a moderate amount of plumbing on each floor |
| 1913 reproduction cost factor | 22c per cubic foot |
| 1927 reproduction cost factor | 44c per cubic foot |

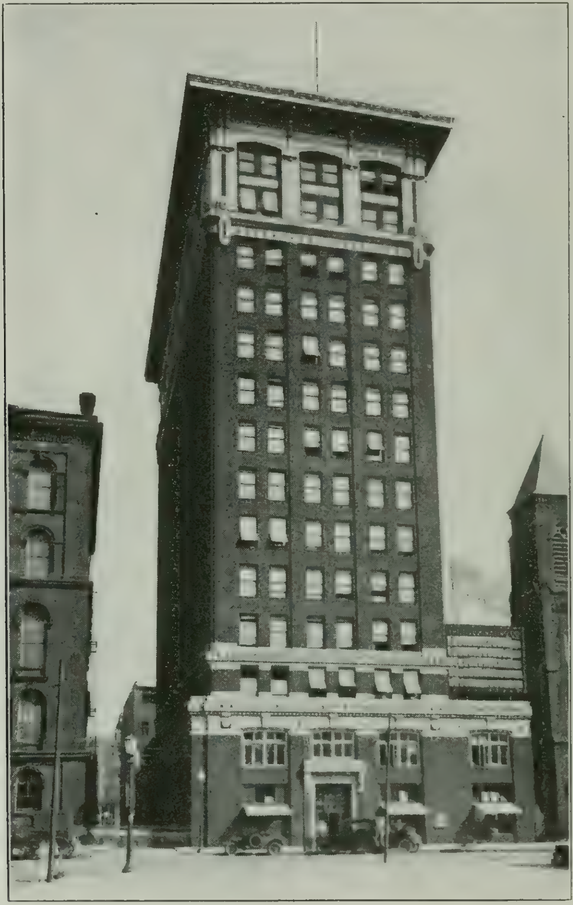
Standard: Cubage 824,180 feet.



OFFICE BUILDING

| | |
|---|---|
| Construction | Well-built office building containing automobile sales room and service station in first story and offices in upper floors—steel frame, fireproof floors—terra cotta front elevation—interior finish of brick—size of building 40 feet x 180 feet |
| 1913 reproduction cost factor | 30c per cubic foot |
| 1927 reproduction cost factor | 60c per cubic foot |

Standard: Cubage 460,636 feet.



OFFICE BUILDING

| | |
|---|---|
| Construction | Fourteen-story steel frame, fireproof building—exterior walls of shale brick trimmed with terra cotta—main floor occupied by a public service corporation for offices with a large public space —interior woodwork of mahogany and oak |
| 1913 reproduction cost factor | 40c per cubic foot |
| 1927 reproduction cost factor | 80c per cubic foot |

Standard: Cubage 1,819,211 feet.

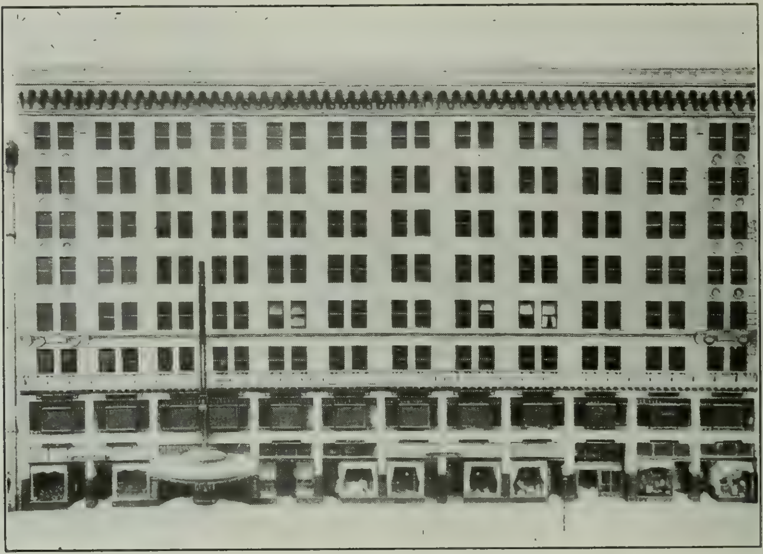
## MONUMENTAL OFFICE BUILDING

20-story steel frame bank and office building with limestone frontages on three streets. Occupied by the Union Trust Co. in Cleveland.

This is the second largest office building in the world. The first five stories of the building are occupied by the bank, the remaining fifteen stories, each containing 43,000 sq. ft. of rentable area, are used for offices. There are thirty-six elevators and seven large bank vaults.

Cubage: 20,330,256. Cost $13,300,000.

Cost factor 65c per cubc foot.



OFFICE BUILDING

| | |
|---|---|
| Construction | Steel frame—limestone front office building of highest type—situated on an interior lot—costly detailed interior and exterior—designed to carry six additional stories |
| Occupancy | Retail shops on first and second floors—upper stories devoted to office space. |

| | |
|---|---|
| 1913 reproduction cost factor | 32c per cubic foot |
| 1927 reproduction cost factor | 64c per cubic foot |

Cubage 2,783,982 feet.

OFFICE-FACTORY BUILDING

| | |
|---|---|
| Construction | Nine-story reinforced concrete frame building with face brick on all elevations—terra cotta trim |
| Occupancy | Basement used for storage—first and second stories used for printing shop—third to ninth floors divided into office space. |
| Interior finish | Gum interior woodwork throughout building. |
| Finished floors | First and second stories have wood block floor; third to seventh cement finish floors; eighth and ninth, composition floors |
| Sprinkler system | Entire building sprinkled |
| Elevators | Three passenger and one freight elevators—two sidewalk lifts—elevator enclosures of ornamental bronze |
| Plumbing | Eighteen toilet rooms with 158 plumbing fixtures |
| 1913 reproduction cost factor | 20c per cu. ft. |
| 1927 reproduction cost factor | 40c per cu. ft. |

Cubage 2,109,910 feet.

**HOTEL BUILDING**

Construction  Steel frame—face brick and terra cotta in all exterior walls, two hundred guest rooms with one bath each—ground floor occupancy very small—building frontage being only 42 feet

| | |
|---|---|
| 1913 reproduction cost factor | 40c per cubic foot |
| 1927 reproduction cost factor | 80c per cubic foot |

Cubage 1,048,801 feet.

HOTEL BUILDING

| | |
|---|---|
| Construction | Modern steel frame fireproof hotel building containing retail shops on street level and 950 guest rooms with one bath each—the exterior walls are of brick trimmed with terra cotta and limestone |
| 1913 reproduction cost factor | 40c per cu. ft. |
| 1927 reproduction cost factor | 80c per cu. ft. |

Cubage 7,185,507 feet.

RESIDENTIAL HOTEL

| | |
|---|---|
| Construction | High class fireproof building containing 400 rooms arranged in suites of 2 to 8 rooms each with 260 bath rooms, interior finish of ornamentally detailed oak —3 passenger and 1 freight elevator |
| 1913 reproduction cost factor | 40c per cu. ft. |
| 1927 reproduction cost factor | 80c per cu. ft. |

Cubage 3,864,236 feet.

RESIDENTIAL HOTEL

| | |
|---|---|
| Construction | Steel frame, fireproof residential hotel building containing 131 suites of 1 to 3 rooms and bath each—first floor contains 6 stores and nine 1-room suites—typical floors have twenty suites of 1 to 3 rooms each; 3 elevators |
| 1913 reproduction cost factor | 42c per cut. ft. |
| 1927 reproduction cost factor | 84c per cu. ft. |

Cubage 975,535 feet.

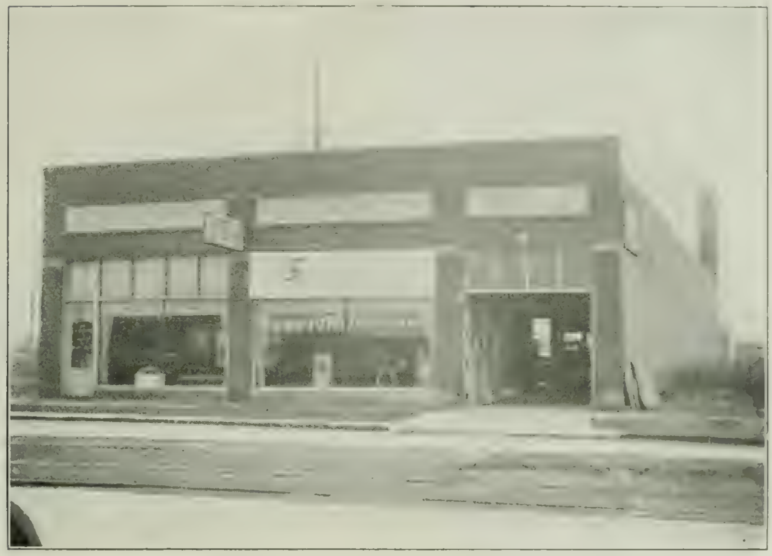
## GARAGE

| | |
|---|---|
| Construction | Brick and hollow tile walls—cement floor—interior unfinished |
| Basement | Small space for boiler room only |
| Roof | Tar and gravel roof over wood joists and boards |
| Heating | Steam heat |
| Plumbing | Three fixtures |

| | |
|---|---|
| 1913 reproduction cost factor | $1.30 per sq. ft. |
| 1927 reproduction cost factor | 2.60 per sq. ft. |

Area 7,000 to 10,000 sq. ft.

Deduct 30c per sq. ft. for stove heat from 1927 cost factors.



## GARAGE AND DISPLAY ROOM

| | |
|---|---|
| Construction | Brick walls—face brick and plate glass front—small display space —size of building 50 x 105 |
| Basement | Small space for boiler room only |
| Roof | Tar and gravel over wood joists and boards |
| Heating | Steam heat |
| Plumbing | Three fixtures |

| | |
|---|---|
| 1913 reproduction cost factor | $1.60 per sq. ft. |
| 1927 reproduction cost factor | 3.20 per sq. ft. |

5250 sq. ft. ground floor area.

AUTOMOBILE SERVICE STATION

| | |
|---|---|
| Construction | Reinforced concrete frame, steel sash, brick walls—face brick and terra cotta trim front |
| Basement | No basement |
| First floor | Small display and office space; remainder garage |
| Second and third floors | Undivided floor areas—reinforced concrete ramp from first to third floors |
| Heating | Steam heat |
| Plumbing | Thirty-five plumbing fixtures |
| Sprinkler system | Entire building equipped with sprinkler system |
| 1923 reproduction cost factors | 12c cubic foot<br>$5.20 square foot |
| 1927 reproduction cost factors | 24c cubic foot<br>$10.40 square foot |

Standard: cubage 928,802 feet.

## AUTOMOBILE SERVICE STATION

| | |
|---|---|
| Construction | Fireproof — reinforced concrete frame, brick walls—face brick and stone trim on two sides |
| Basement | No basement |
| First floor | Display space and service rooms |
| Second floor | Undivided area devoted to repair service and storage |
| Heating | Steam heat |

| | |
|---|---|
| 1913 reproduction cost factor | 14c per cu. ft. |
| 1927 reproduction cost factor | 28c per cu. ft. |

Standard: cubage 400,000 feet.

AUTOMOBILE ASSEMBLING AND SERVICE BUILDING

| | |
|---|---|
| Construction | Fireproof — reinforced concrete frame and floors, face brick with terra cotta trim on front |
| Basement | No basement |
| First floor | Display space and service rooms |
| Second floor | Office space in front part, other parts undivided |
| Third and fourth floors | Undivided floor area |
| Heating | Steam heat |

| | |
|---|---|
| 1913 reproduction cost factor | 11c per cu. ft. |
| 1927 reproduction cost factor | 22c per cu. ft. |

Standard: cubage 3,242,770 feet.

FACTORY BUILDING

| | |
|---|---|
| Construction | Brick walls, steel sash—undivided floor area except small office space in front of building—14 foot story height |
| Basement | For boiler room only |
| Roof | Tar and gravel over wood roof joists |
| Floor | Cement floor |
| Heating | Steam |
| Plumbing | Small amount of plumbing |

| | |
|---|---|
| 1913 reproduction cost factor | $1.50 |
| 1927 reproduction cost factor | 3.00 |

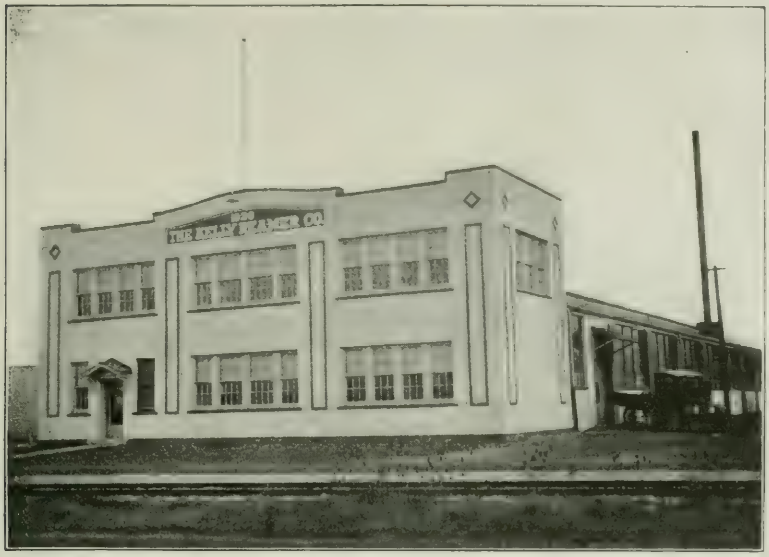
Standard: 16,000 sq. ft. ground floor area.

## FACTORY BUILDING

| | |
|---|---|
| Construction | Size of building—two-story section 63 x 32—one-story section 62 x 60—face brick front wall in 2-story part, remainder common brick—mill construction floors and roof |
| Basement | For boiler room 20 x 35 feet in size |
| First story | Entire first story devoted to factory use |
| Second story | Second story devoted to office space—oak floors and finish—walls and ceilings of office of metal lath and plaster |
| Heating | Steam heat |
| Plumbing | Three toilets—total number of fixtures—8 |

| | | Per foot |
|---|---|---|
| 1913 reproduction cost factors | 2 story | $6.00 |
| | 1 story | 2.20 |
| 1927 reproduction cost factors | 2 story | 12.00 |
| | 1 story | 4.40 |

Area 2-story section 2016 square feet.
Area 1-story section 3720 square feet.



## FACTORY BUILDING

| | |
|---|---|
| Construction | Stucco or brick walls—size of 2-story office scetion 61 feet x 20 feet—1-story section 61 feet x 180 feet—steel frame and steel sash factory construction — maple floors throughout entire building |
| Roof | Mill construction roof |
| Basement | None |
| Heating | Steam |
| Plumbing | Three toilet rooms—total fixtures 13 |

| | | Per foot |
|---|---|---|
| | Office | $ 6.00 |
| 1913 reproduction cost factors | Factory | 2.00 |
| 1927 reproduction cost factors | Office | 12.00 |
| | Factory | 4.00 |

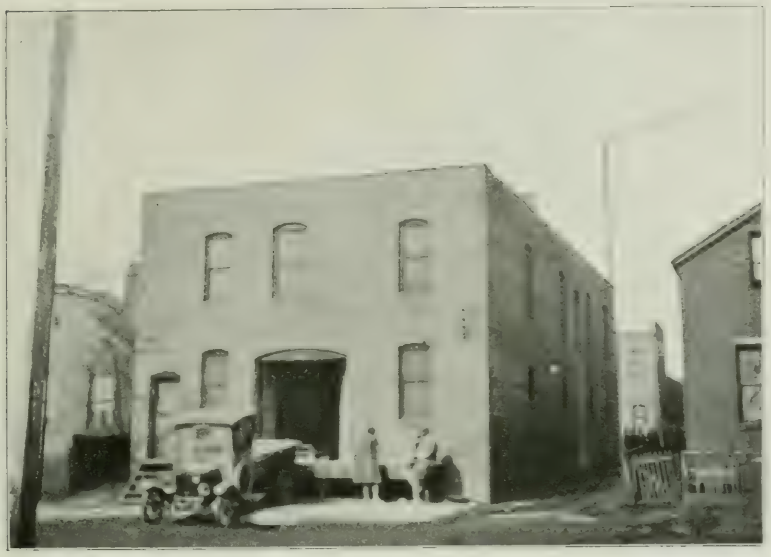
Area 2-story section 1220 square feet
Area 1-story section 10980 square feet

## FACTORY BUILDING

| | |
|---|---|
| Construction | Modern fireproof factory building—reinforced concrete frame—press brick exterior on all sides except rear—large number of steel sash windows—cement finished floors |
| Basement | None |
| First to fourth stories | Undivided area except for factory offices and tiled floor hospital on first floor |
| Heating | Steam |
| Plumbing | Usual amount of plumbing found in textile factories of this type |
| Sprinkler system | All floors provided with sprinkler system |

| | |
|---|---|
| 1913 reproduction cost factor | 12½c per cu. ft. |
| 1927 reproduction cost factor | 25c per cu. ft. |

Standard: Cubage 2,906,497 feet.



## COMMON WAREHOUSE

| | |
|---|---|
| Construction | Common brick walls throughout—joist floor construction—undivided floor space |
| Basement | None |
| Heating | None |
| Plumbing | None |
| Elevators | None |

| | 1 story | 2 stories |
|---|---|---|
| 1913 reproduction cost factors | $0.60 | $1.10 |
| 1927 reproduction cost factors | 1.20 | 2.20 |

Standard: 3000 to 6000 sq. ft. ground floor area.

## STORAGE WAREHOUSE

| | |
|---|---|
| Construction | Reinforced concrete frame—press brick front wall, others common brick—sprinkler system equipped throughout—undivided floor area on each story except for a small office space in first story |
| Basement | Basement under entire building |
| Floors | Finished floors of cement |
| Heating | Steam |
| Plumbing | Plumbing fixtures on each floor |

| | |
|---|---|
| 1913 reproduction cost factor | 12½c per cu. ft. |
| 1927 reproduction cost factor | 25c per cu. ft. |

Standard: Cubage 1,233,854 feet.

STORAGE WAREHOUSE

| | |
|---|---|
| Construction | Six stories high, reinforced concrete frame, floors and roof—face brick front and side walls trimmed with terra cotta |
| Basement | Small basement for heating plant |
| Heating | Steam heating in first story only |
| Plumbing | Four plumbing fixtures |

| | |
|---|---|
| 1913 reproduction cost factor | 13c cu. ft. |
| 1927 reproduction cost factor | 26c cu. ft. |

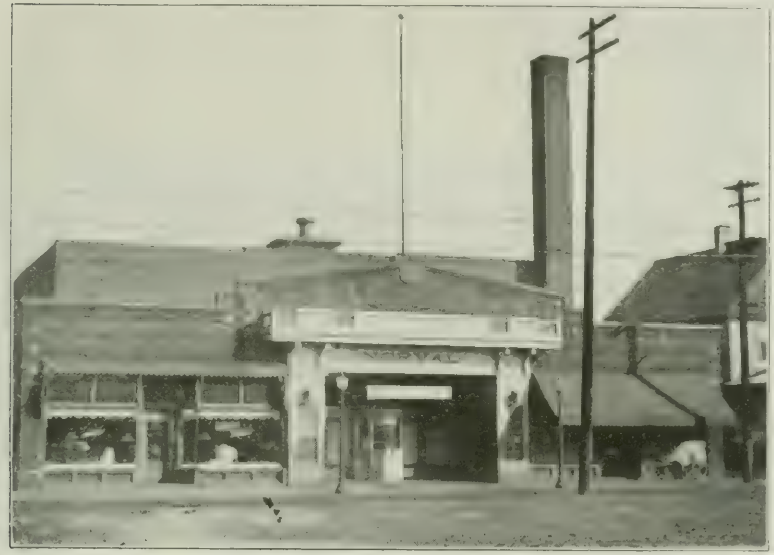
Cubage 496,450 feet.

## MARKET HOUSE WITH STORES

| | |
|---|---|
| Construction | Steel frame brick walls with face brick front and stone trim—front section of building is two stories high—the rear or market section is one story high |
| Basement | Basement under two-story section |
| First story | Stores and market house |
| Second story | Offices |
| Heating | Steam |
| Finish | Market house fixtures are of enameled tile and of special design—the woodwork in stores and offices is of cherry and birch |

| | |
|---|---|
| 1913 reproduction cost factor | 13c cu. ft. |
| 1927 reproduction cost factor | 26c cu. ft. |

Cubage 1,123,616 feet.



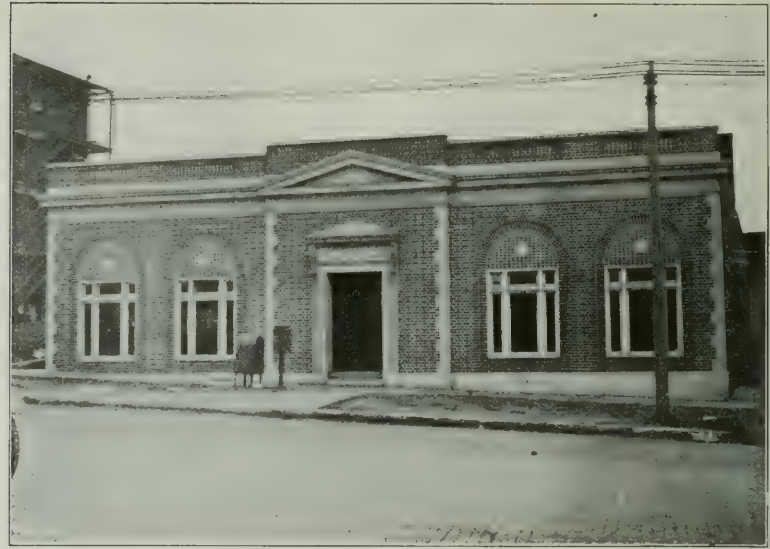
## MOVING PICTURE THEATRE AND STORES

| | |
|---|---|
| Occupancy | Theatre containing 759 seats—two small stores |
| Walls | Face brick front—other walls common brick |
| Roof | Non-fireproof roof |
| Heating | Steam heat |
| Plumbing | Two toilet rooms in Theatre—two plumbing fixtures in each store |

Seating and organ not included

| | |
|---|---|
| 1913 reproduction cost factor | $3.00 per foot |
| 1927 reproduction cost factor | 6.00 per foot |

10,000 sq. ft. ground floor area.



POSTAL SUBSTATION

| | |
|---|---|
| Walls | Face brick front with stone trim—other walls common brick |
| Roof | Non-fireproof roof—supported by wood beams and columns |
| Basement | Full basement—undivided area |
| Main floor | Undivided floor space—wood floor construction except at lobby where flooring is of reinforced concrete. All walls and ceilings plastered |
| Heating | Furnace heat |
| Plumbing | Nine fixtures |

| | |
|---|---|
| 1913 reproduction cost factor | $2.90 per foot |
| 1927 reproduction cost factor | 5.80 per foot |

Standard: 5500 sq. ft. ground floor area.

# ADDENDA

## DEPTH TABLE

### Cleveland Standard

Percentage of Unit Value for Lots from 1 to 700 Feet Deep

| Depth | | 50 | 72.50 | 100 | 100.00 | 150 | 115.00 | 200 | 122.00 |
|---|---|---|---|---|---|---|---|---|---|
| 1 ft. | 3.10% | 1 | 73.25 | 1 | 100.41 | 1 | 115.19 | 1 | 122.10 |
| 2 | 6.10 | 2 | 74.00 | 2 | 100.85 | 2 | 115.38 | 2 | 122.20 |
| 3 | 9.00 | 3 | 74.75 | 3 | 101.27 | 3 | 115.57 | 3 | 122.30 |
| 4 | 11.75 | 4 | 75.50 | 4 | 101.70 | 4 | 115.76 | 4 | 122.40 |
| 5 | 14.35 | 5 | 76.20 | 5 | 102.08 | 5 | 115.95 | 5 | 122.50 |
| 6 | 16.75 | 6 | 76.90 | 6 | 102.48 | 6 | 116.12 | 210 | 122.95 |
| 7 | 19.05 | 7 | 77.55 | 7 | 102.88 | 7 | 116.29 | 15 | 123.38 |
| 8 | 21.50 | 8 | 78.20 | 8 | 103.25 | 8 | 116.46 | 20 | 123.80 |
| 9 | 23.20 | 9 | 78.85 | 9 | 103.62 | 9 | 116.62 | 30 | 124.60 |
| 10 | 25.00 | 60 | 79.50 | 110 | 104.00 | 160 | 116.80 | 240 | 125.35 |
| 1 | 26.70 | 1 | 80.11 | 1 | 104.36 | 1 | 116.96 | 50 | 126.05 |
| 2 | 28.36 | 2 | 80.77 | 2 | 104.72 | 2 | 117.13 | 60 | 126.75 |
| 3 | 29.99 | 3 | 81.38 | 3 | 105.08 | 3 | 117.30 | 70 | 127.40 |
| 4 | 31.61 | 4 | 82.00 | 4 | 105.54 | 4 | 117.47 | 80 | 128.05 |
| 5 | 33.22 | 5 | 82.61 | 5 | 105.78 | 5 | 117.64 | 90 | 128.65 |
| 6 | 34.92 | 6 | 83.21 | 6 | 106.13 | 6 | 117.79 | 300 | 129.25 |
| 7 | 36.41 | 7 | 83.82 | 7 | 106.47 | 7 | 117.94 | 10 | 129.80 |
| 8 | 37.97 | 8 | 84.42 | 8 | 106.81 | 8 | 118.09 | 20 | 130.35 |
| 9 | 39.50 | 9 | 85.01 | 9 | 107.15 | 9 | 118.24 | 30 | 130.90 |
| 20 | 41.00 | 70 | 85.60 | 120 | 107.50 | 170 | 118.40 | 340 | 131.40 |
| 1 | 42.50 | 1 | 86.15 | 1 | 107.80 | 1 | 118.54 | 50 | 131.90 |
| 2 | 43.96 | 2 | 86.70 | 2 | 108.11 | 2 | 118.70 | 60 | 132.40 |
| 3 | 45.30 | 3 | 87.24 | 3 | 108.43 | 3 | 118.85 | 70 | 132.85 |
| 4 | 46.61 | 4 | 87.78 | 4 | 108.75 | 4 | 119.00 | 80 | 133.30 |
| 5 | 47.90 | 5 | 88.30 | 5 | 109.05 | 5 | 119.14 | 90 | 133.75 |
| 6 | 49.17 | 6 | 88.82 | 6 | 109.35 | 6 | 119.28 | 400 | 134.20 |
| 7 | 50.40 | 7 | 89.35 | 7 | 109.65 | 7 | 119.41 | 10 | 134.60 |
| 8 | 51.61 | 8 | 89.87 | 8 | 109.93 | 8 | 119.54 | 20 | 135.00 |
| 9 | 52.81 | 9 | 90.39 | 9 | 110.21 | 9 | 119.67 | 30 | 135.40 |
| 30 | 54.00 | 80 | 90.90 | 130 | 110.50 | 180 | 119.80 | 440 | 135.80 |
| 1 | 55.05 | 1 | 91.39 | 1 | 110.76 | 1 | 119.92 | 50 | 136.15 |
| 2 | 56.10 | 2 | 91.89 | 2 | 111.02 | 2 | 120.05 | 60 | 136.50 |
| 3 | 57.15 | 3 | 92.38 | 3 | 111.28 | 3 | 120.18 | 70 | 136.85 |
| 4 | 58.20 | 4 | 92.86 | 4 | 111.55 | 4 | 120.31 | 80 | 137.20 |
| 5 | 59.20 | 5 | 93.33 | 5 | 111.80 | 5 | 120.43 | 90 | 137.55 |
| 6 | 60.30 | 6 | 93.80 | 6 | 112.05 | 6 | 120.55 | 500 | 137.85 |
| 7 | 61.25 | 7 | 94.27 | 7 | 112.28 | 7 | 120.66 | 10 | 138.15 |
| 8 | 62.20 | 8 | 94.73 | 8 | 112.52 | 8 | 120.77 | 20 | 138.45 |
| 9 | 63.10 | 9 | 95.17 | 9 | 112.76 | 9 | 120.88 | 30 | 138.75 |
| 40 | 64.00 | 90 | 95.60 | 140 | 113.00 | 190 | 121.00 | 540 | 139.05 |
| 1 | 64.95 | 1 | 96.04 | 1 | 113.20 | 1 | 121.10 | 50 | 139.30 |
| 2 | 65.90 | 2 | 96.50 | 2 | 113.43 | 2 | 121.21 | 60 | 139.55 |
| 3 | 66.75 | 3 | 96.95 | 3 | 113.64 | 3 | 121.32 | 70 | 139.80 |
| 4 | 67.60 | 4 | 97.40 | 4 | 113.85 | 4 | 121.43 | 80 | 140.05 |
| 5 | 68.45 | 5 | 97.85 | 5 | 114.05 | 5 | 121.53 | 600 | 140.55 |
| 6 | 69.30 | 6 | 98.30 | 6 | 114.25 | 6 | 121.62 | 20 | 140.95 |
| 7 | 70.10 | 7 | 98.74 | 7 | 114.45 | 7 | 121.71 | 40 | 141.35 |
| 8 | 70.90 | 8 | 99.17 | 8 | 114.64 | 8 | 121.80 | 60 | 141.75 |
| 9 | 71.50 | 9 | 99.58 | 9 | 114.82 | 9 | 121.90 | 80 | 142.05 |
| 50 | 72.50 | 100 | 100.00 | 150 | 115.00 | 200 | 122.00 | 700 | 142.35 |

## THE RENT YOU PAY

*(This table indicates how rent money, figured on a six per cent interest basis, amounts to large sums in a few years time.)*

| Per Mo. | 10 Years | 15 Years | 20 Years | 25 Years |
|---|---|---|---|---|
| $ 25 | $ 3,954.20 | $ 6,982.73 | $11,035.65 | $16,459.28 |
| 30 | 4,745.04 | 8,379.27 | 13,242.78 | 19,751.14 |
| 35 | 5,535.88 | 9,775.82 | 15,449.91 | 23,042.99 |
| 50 | 7,908.40 | 13,965.46 | 22,071.30 | 32,918.56 |
| 60 | 9,490.08 | 16,758.54 | 26,485.56 | 39,502.28 |
| 75 | 11,862.60 | 20,948.19 | 33,106.95 | 49,377.48 |
| 85 | 13,444.28 | 23,741.28 | 37,521.21 | 55,961.55 |
| 100 | 15,816.80 | 27,930.92 | 44,142.60 | 65,837.12 |

## LOTS PER ACRE

This interesting table shows the number of lots obtainable per acre in connection with the subdivision of land, using the dimensions indicated below as average sized lots. Allowance has been made for the lots to front on a fifty-foot street with cross streets every 800 feet for the smaller lots and increasing proportionately up to 2,000 feet for the largest.

| Size of Lots | Number of Lots per Acre | Size of Lots | Number of Lots per Acre |
|---|---|---|---|
| 40 x 100 | 8.23 | 60 x 175 | 3.48 |
| 40 x 120 | 7.07 | 60 x 200 | 3.10 |
| 40 x 150 | 5.80 | 70 x 175 | 3.00 |
| 45 x 125 | 6.11 | 70 x 200 | 2.67 |
| 45 x 150 | 5.25 | 80 x 200 | 2.35 |
| 50 x 150 | 4.74 | 80 x 240 | 1.99 |
| 50 x 175 | 4.14 | 100 x 250 | 1.54 |

Inasmuch as every subdivision presents a different problem as to location of streets, the above table is approximate only, but accurate enough for all practical purposes.

## HOW RENT MOUNTS UP

*(This table indicates the amount of rent paid in a period of 10 to 30 years, with interest at 6%.)*

AT $10.00 per month it amounts to:—

| | |
|---|---|
| In 10 years | $ 1,581.68 |
| 15 years | 2,793.10 |
| 20 years | 4,414.26 |
| 25 years | 6,583.72 |
| 30 years | 9,485.96 |

AT $20.00 per month it amounts to

| | |
|---|---|
| In 10 years | $ 3,163.36 |
| 15 years | 5,586.19 |
| 20 years | 8,828.52 |
| 25 years | 13,167.43 |
| 30 years | 18,973.92 |

AT $25.00 per month it amounts to:

| | |
|---|---|
| In 10 years | $ 3,454.20 |
| 15 years | 6,972.73 |
| 20 years | 11,035.65 |
| 25 years | 16,459.28 |
| 30 years | 23,171.40 |

AT $30.00 per month it amounts to

| | |
|---|---|
| In 10 years | $ 4,745.04 |
| 15 years | 8,378.27 |
| 20 years | 13,242.78 |
| 25 years | 19,751.14 |
| 30 years | 28,460.88 |

## INCHES REDUCED TO FRACTIONS OF FEET

| | | |
|---|---|---|
| 1 inch equals | 0.08 1/3 | feet |
| 2 inches equals | 0.16 2/3 | feet |
| 3 inches equals | 0.25 | feet |
| 4 inches equals | 0.33 1/3 | feet |
| 5 inches equals | 0.41 2/3 | feet |
| 6 inches equals | 0.5 | feet |
| 7 inches equals | 0.58 1/3 | feet |
| 8 inches equals | 0.66 2/3 | feet |
| 9 inches equals | 0.75 | feet |
| 10 inches equals | 0.83 1/3 | feet |
| 11 inches equals | 0.91 2/3 | feet |
| 12 inches equals | 1.0 | feet |

## TABLE I—PRESENT WORTH

The following table will be found invaluable in determining today's worth of
present worth of an annually recurring saving or rental or income of $1 per year
value of leasehold estate to lessor calling for $6000 annually for 25 years, money
value of $1, multiplied by $6000 equals $76,698.00. If the rental is payable
50 periods at 3%, which factor is 25,730 multiplied by $3000 equals $77,190.00. If the
making 100 periods at 1½%, which factor is 51.6247 multiplied by the quarterly
between a semi-annual and an annual calculation is approximately $492 or 2-3
annual calculation is about $640 or about 5-6 of 1%. Note that these calcula-
worth of such worth as of a particular day should be taken, plus the intervening

| Yrs. | 1¼% | 1½% | 1¾% | 2% | 2¼% | 2½% | 2¾% | Yrs. |
|---|---|---|---|---|---|---|---|---|
| 1 | .988 | .986 | .983 | .980 | .978 | .976 | .973 | 1 |
| 2 | 1.963 | 1.956 | 1.949 | 1.942 | 1.934 | 1.927 | 1.920 | 2 |
| 3 | 2.927 | 2.912 | 2.898 | 2.884 | 2.870 | 2.856 | 2.842 | 3 |
| 4 | 3.878 | 3.854 | 3.831 | 3.808 | 3.785 | 3.762 | 3.739 | 4 |
| 5 | 4.818 | 4.783 | 4.748 | 4.713 | 4.679 | 4.646 | 4.613 | 5 |
| 6 | 5.756 | 5.697 | 5.649 | 5.601 | 5.554 | 5.508 | 5.462 | 6 |
| 7 | 6.663 | 6.598 | 6.535 | 6.472 | 6.410 | 6.349 | 6.289 | 7 |
| 8 | 7.568 | 7.486 | 7.405 | 7.325 | 7.247 | 7.170 | 7.094 | 8 |
| 9 | 8.462 | 8.360 | 8.260 | 8.162 | 8.066 | 7.971 | 7.878 | 9 |
| 10 | 9.346 | 9.222 | 9.101 | 8.983 | 8.866 | 8.752 | 8.640 | 10 |
| 11 | 10.218 | 10.071 | 9.927 | 9.787 | 9.649 | 9.514 | 9.382 | 11 |
| 12 | 11.079 | 10.907 | 10.740 | 10.578 | 10.415 | 10.258 | 10.104 | 12 |
| 13 | 11.930 | 11.731 | 11.538 | 11.348 | 11.164 | 10.983 | 10.807 | 13 |
| 14 | 12.771 | 12.543 | 12.322 | 12.106 | 11.896 | 11.691 | 11.491 | 14 |
| 15 | 13.601 | 13.343 | 13.093 | 12.849 | 12.612 | 12.381 | 12.157 | 15 |
| 16 | 14.420 | 14.131 | 13.850 | 13.578 | 13.313 | 13.055 | 12.805 | 16 |
| 17 | 15.230 | 14.908 | 14.596 | 14.292 | 13.998 | 13.712 | 13.436 | 17 |
| 18 | 16.030 | 15.673 | 15.327 | 14.992 | 14.668 | 14.353 | 14.049 | 18 |
| 19 | 16.819 | 16.426 | 16.046 | 15.678 | 15.323 | 14.979 | 14.646 | 19 |
| 20 | 17.599 | 17.169 | 16.753 | 16.351 | 15.964 | 15.589 | 15.227 | 20 |
| 21 | 18.370 | 17.900 | 17.448 | 17.011 | 16.590 | 16.185 | 15.793 | 21 |
| 22 | 19.131 | 18.621 | 18.130 | 17.658 | 17.203 | 16.765 | 16.343 | 22 |
| 23 | 19.882 | 19.331 | 18.801 | 18.292 | 17.803 | 17.332 | 16.879 | 23 |
| 24 | 20.624 | 20.030 | 19.461 | 18.914 | 18.399 | 17.885 | 17.401 | 24 |
| 25 | 21.357 | 20.720 | 20.109 | 19.523 | 18.962 | 18.424 | 17.908 | 25 |
| 26 | 22.081 | 21.399 | 20.746 | 20.121 | 19.523 | 18.951 | 18.402 | 26 |
| 27 | 22.796 | 22.068 | 21.372 | 20.707 | 20.071 | 19.464 | 18.883 | 27 |
| 28 | 23.502 | 22.727 | 21.987 | 21.281 | 20.608 | 19.965 | 19.351 | 28 |
| 29 | 24.200 | 23.376 | 22.592 | 21.844 | 21.132 | 20.454 | 19.806 | 29 |
| 30 | 24.889 | 24.016 | 23.186 | 22.396 | 21.645 | 20.930 | 20.249 | 30 |
| 31 | 25.569 | 24.646 | 23.770 | 22.938 | 22.147 | 21.395 | 20.681 | 31 |
| 32 | 26.241 | 25.267 | 24.344 | 23.468 | 22.638 | 21.849 | 21.100 | 32 |
| 33 | 26.905 | 25.879 | 24.908 | 23.989 | 23.117 | 22.292 | 21.509 | 33 |
| 34 | 27.560 | 26.482 | 25.462 | 24.499 | 23.587 | 22.724 | 21.906 | 34 |
| 35 | 28.208 | 27.076 | 26.007 | 24.999 | 24.046 | 23.145 | 22.293 | 35 |
| 36 | 28.847 | 27.661 | 26.543 | 25.489 | 24.495 | 23.556 | 22.670 | 36 |
| 37 | 29.479 | 28.237 | 27.069 | 25.969 | 24.934 | 23.957 | 23.036 | 37 |
| 38 | 30.102 | 28.805 | 27.586 | 26.441 | 25.363 | 24.349 | 23.393 | 38 |
| 39 | 30.718 | 29.365 | 28.095 | 26.903 | 25.783 | 24.730 | 23.740 | 39 |
| 40 | 31.327 | 29.916 | 28.594 | 27.355 | 26.193 | 25.103 | 24.078 | 40 |
| 41 | 31.928 | 30.459 | 29.085 | 27.799 | 26.595 | 25.466 | 24.407 | 41 |
| 42 | 32.521 | 30.994 | 29.568 | 28.235 | 26.988 | 25.821 | 24.727 | 42 |
| 43 | 33.107 | 31.521 | 30.042 | 28.662 | 27.372 | 26.168 | 25.038 | 43 |
| 44 | 33.686 | 32.041 | 30.508 | 29.080 | 27.748 | 26.504 | 25.341 | 44 |
| 45 | 34.258 | 32.552 | 30.966 | 29.490 | 28.115 | 26.833 | 25.636 | 45 |
| 46 | 34.823 | 33.056 | 31.416 | 29.892 | 28.474 | 27.154 | 25.924 | 46 |
| 47 | 35.381 | 33.553 | 31.859 | 30.287 | 28.822 | 27.467 | 26.203 | 47 |
| 48 | 35.931 | 34.043 | 32.294 | 30.673 | 29.170 | 27.773 | 26.475 | 48 |
| 49 | 36.475 | 34.525 | 32.721 | 31.052 | 29.506 | 28.071 | 26.740 | 49 |
| 50 | 37.013 | 35.000 | 33.141 | 31.424 | 29.834 | 28.362 | 26.998 | 50 |

## OF FUTURE RENTALS

any saving or increase of income which extends thru future years. It shows the
for any number of years at a given rate of interest. For example, what is the
being worth 6%? See factor 25 periods, 6%, equals $12,783, which equals the
semi-annually, multiply the periods, viz. 25 by 2 and divide the rate by 2, making
rental is payable quarterly, multiply the periods, viz. 25 by 4 and divide the rate by 4,
payment of $1,500 equals $77,437.05. It will be observed that the difference
of 1% in the aggregate amount, while the difference between a quarterly and an
tions are for full years commencing on the first day of the year. The present
interest and payment.

| Yrs. | 3% | 3½% | 4% | 4½% | 5% | 5½% | 6% | 7% | 8% | Yrs. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | .971 | .966 | .962 | .957 | .952 | .948 | .943 | .935 | .926 | 1 |
| 2 | 1.913 | 1.900 | 1.886 | 1.873 | 1.859 | 1.846 | 1.833 | 1.808 | 1.783 | 2 |
| 3 | 2.829 | 2.802 | 2.775 | 2.749 | 2.723 | 2.698 | 2.673 | 2.624 | 2.577 | 3 |
| 4 | 3.717 | 3.673 | 3.630 | 3.588 | 3.546 | 3.505 | 3.465 | 3.387 | 3.312 | 4 |
| 5 | 4.580 | 4.515 | 4.452 | 4.390 | 4.329 | 4.270 | 4.212 | 4.100 | 3.993 | 5 |
| 6 | 5.417 | 5.329 | 5.242 | 5.158 | 5.076 | 4.996 | 4.917 | 4.767 | 4.623 | 6 |
| 7 | 6.230 | 6.115 | 6.002 | 5.893 | 5.786 | 5.683 | 5.582 | 5.389 | 5.206 | 7 |
| 8 | 7.020 | 6.874 | 6.733 | 6.596 | 6.463 | 6.335 | 6.210 | 5.971 | 5.747 | 8 |
| 9 | 7.786 | 7.608 | 7.435 | 7.269 | 7.108 | 6.952 | 6.802 | 6.515 | 6.247 | 9 |
| 10 | 8.530 | 8.317 | 8.111 | 7.913 | 7.722 | 7.538 | 7.360 | 7.024 | 6.710 | 10 |
| 11 | 9.253 | 9.002 | 8.760 | 8.529 | 8.306 | 8.093 | 7.887 | 7.499 | 7.139 | 11 |
| 12 | 9.954 | 9.663 | 9.385 | 9.119 | 8.863 | 8.619 | 8.384 | 7.943 | 7.536 | 12 |
| 13 | 10.635 | 10.303 | 9.986 | 9.683 | 9.394 | 9.117 | 8.853 | 8.358 | 7.904 | 13 |
| 14 | 11.296 | 10.921 | 10.563 | 10.223 | 9.899 | 9.590 | 9.295 | 8.745 | 8.244 | 14 |
| 15 | 11.938 | 11.517 | 11.118 | 10.740 | 10.380 | 10.038 | 9.712 | 9.108 | 8.559 | 15 |
| 16 | 12.561 | 12.094 | 11.652 | 11.234 | 10.838 | 10.462 | 10.106 | 9.447 | 8.851 | 16 |
| 17 | 13.166 | 12.651 | 12.166 | 11.707 | 11.274 | 10.865 | 10.477 | 9.763 | 9.122 | 17 |
| 18 | 13.754 | 13.190 | 12.659 | 12.160 | 11.690 | 11.246 | 10.828 | 10.059 | 9.372 | 18 |
| 19 | 14.324 | 13.710 | 13.134 | 12.593 | 12.085 | 11.608 | 11.158 | 10.336 | 9.604 | 19 |
| 20 | 14.877 | 14.212 | 13.590 | 13.008 | 12.462 | 11.950 | 11.470 | 10.594 | 9.818 | 20 |
| 21 | 15.415 | 14.698 | 14.029 | 13.405 | 12.821 | 12.275 | 11.764 | 10.836 | 10.017 | 21 |
| 22 | 15.937 | 15.167 | 14.451 | 13.784 | 13.163 | 12.583 | 12.042 | 11.061 | 10.201 | 22 |
| 23 | 16.444 | 15.620 | 14.857 | 14.148 | 13.489 | 12.875 | 12.303 | 11.272 | 10.371 | 23 |
| 24 | 16.936 | 16.058 | 15.247 | 14.495 | 13.799 | 13.152 | 12.550 | 11.469 | 10.529 | 24 |
| 25 | 17.413 | 16.482 | 15.622 | 14.828 | 14.094 | 13.414 | 12.783 | 11.654 | 10.675 | 25 |
| 26 | 17.877 | 16.890 | 15.983 | 15.147 | 14.375 | 13.663 | 13.003 | 11.826 | 10.810 | 26 |
| 27 | 18.327 | 17.285 | 16.330 | 15.451 | 14.643 | 13.898 | 13.211 | 11.987 | 10.935 | 27 |
| 28 | 18.764 | 17.667 | 16.663 | 15.743 | 14.898 | 14.121 | 13.406 | 12.137 | 11.051 | 28 |
| 29 | 19.188 | 18.036 | 16.984 | 16.022 | 15.141 | 14.333 | 13.591 | 12.278 | 11.158 | 29 |
| 30 | 19.600 | 18.392 | 17.292 | 16.289 | 15.372 | 14.534 | 13.765 | 12.409 | 11.258 | 30 |
| 31 | 20.000 | 18.736 | 17.588 | 16.544 | 15.593 | 14.724 | 13.929 | 12.532 | 11.350 | 31 |
| 32 | 20.389 | 19.069 | 17.874 | 16.789 | 15.803 | 14.904 | 14.084 | 12.647 | 11.435 | 32 |
| 33 | 20.766 | 19.390 | 18.148 | 17.023 | 16.003 | 15.075 | 14.230 | 12.754 | 11.514 | 33 |
| 34 | 21.132 | 19.701 | 18.411 | 17.247 | 16.193 | 15.237 | 14.368 | 12.854 | 11.587 | 34 |
| 35 | 21.487 | 20.001 | 18.665 | 17.461 | 16.374 | 15.391 | 14.498 | 12.948 | 11.655 | 35 |
| 36 | 21.832 | 20.290 | 18.908 | 17.666 | 16.547 | 15.536 | 14.621 | 13.035 | 11.717 | 36 |
| 37 | 22.167 | 20.571 | 19.143 | 17.862 | 16.711 | 15.674 | 14.737 | 13.117 | 11.775 | 37 |
| 38 | 22.492 | 20.841 | 19.368 | 18.050 | 16.868 | 15.805 | 14.846 | 13.193 | 11.829 | 38 |
| 39 | 22.808 | 21.103 | 19.584 | 18.230 | 17.017 | 15.929 | 14.949 | 13.265 | 11.879 | 39 |
| 40 | 23.115 | 21.355 | 19.793 | 18.402 | 17.159 | 16.046 | 15.046 | 13.332 | 11.925 | 40 |
| 41 | 23.412 | 21.599 | 19.993 | 18.566 | 17.294 | 16.157 | 15.138 | 13.394 | 11.967 | 41 |
| 42 | 23.701 | 21.835 | 20.186 | 18.724 | 17.423 | 16.263 | 15.225 | 13.452 | 12.007 | 42 |
| 43 | 23.982 | 22.063 | 20.371 | 18.874 | 17.546 | 16.363 | 15.306 | 13.507 | 12.043 | 43 |
| 44 | 24.254 | 22.283 | 20.549 | 19.018 | 17.663 | 16.458 | 15.383 | 13.558 | 12.077 | 44 |
| 45 | 24.519 | 22.495 | 20.720 | 19.156 | 17.774 | 16.548 | 15.456 | 13.606 | 12.108 | 45 |
| 46 | 24.775 | 22.701 | 20.885 | 19.288 | 17.880 | 16.633 | 15.524 | 13.650 | 12.137 | 46 |
| 47 | 25.025 | 22.899 | 21.043 | 19.415 | 17.981 | 16.714 | 15.589 | 13.692 | 12.164 | 47 |
| 48 | 25.267 | 23.091 | 21.195 | 19.536 | 18.077 | 16.790 | 15.650 | 13.730 | 12.189 | 48 |
| 49 | 25.502 | 23.277 | 21.341 | 19.651 | 18.169 | 16.863 | 15.708 | 13.677 | 12.212 | 49 |
| 50 | 25.730 | 23.456 | 21.482 | 19.762 | 18.256 | 16.932 | 15.762 | 13.801 | 12.233 | 50 |

## TABLE I—PRESENT WORTH OF

| Yrs. | 1¼% | 1½% | 1¾% | 2% | 2¼% | 2½% | 2¾% | Yrs. |
|---|---|---|---|---|---|---|---|---|
| 51 | 37.544 | 35.468 | 33.554 | 31.788 | 30.156 | 28.646 | 27.248 | 51 |
| 52 | 38.068 | 35.929 | 33.960 | 32.145 | 30.470 | 28.923 | 27.492 | 52 |
| 53 | 38.585 | 36.383 | 34.358 | 32.495 | 30.778 | 29.193 | 27.729 | 53 |
| 54 | 39.097 | 36.830 | 34.750 | 32.838 | 31.078 | 29.457 | 27.960 | 54 |
| 55 | 39.602 | 37.271 | 35.135 | 33.175 | 31.373 | 29.714 | 28.185 | 55 |
| 56 | 40.100 | 37.706 | 35.514 | 33.505 | 31.660 | 29.965 | 28.404 | 56 |
| 57 | 40.593 | 38.134 | 35.886 | 33.828 | 31.942 | 30.210 | 28.617 | 57 |
| 58 | 41.079 | 38.555 | 36.252 | 34.145 | 32.217 | 30.448 | 28.824 | 58 |
| 59 | 41.560 | 38.971 | 36.611 | 34.456 | 32.486 | 30.681 | 29.026 | 59 |
| 60 | 42.035 | 39.380 | 36.964 | 34.761 | 32.749 | 30.909 | 29.223 | 60 |
| 61 | 42.503 | 39.783 | 37.311 | 35.060 | 33.006 | 31.130 | 29.414 | 61 |
| 62 | 42.966 | 40.181 | 37.652 | 35.353 | 33.258 | 31.347 | 29.600 | 62 |
| 63 | 43.423 | 40.572 | 37.987 | 35.640 | 33.504 | 31.558 | 29.781 | 63 |
| 64 | 43.875 | 40.958 | 38.317 | 35.921 | 33.745 | 31.764 | 29.957 | 64 |
| 65 | 44.321 | 41.338 | 38.641 | 36.197 | 33.980 | 31.965 | 30.128 | 65 |
| 66 | 44.761 | 41.712 | 38.959 | 36.468 | 34.211 | 32.161 | 30.295 | 66 |
| 67 | 45.196 | 42.081 | 39.272 | 36.733 | 34.436 | 32.352 | 30.458 | 67 |
| 68 | 45.626 | 42.444 | 39.579 | 36.994 | 34.656 | 32.538 | 30.616 | 68 |
| 69 | 46.051 | 42.802 | 39.881 | 37.249 | 34.871 | 32.720 | 30.770 | 69 |
| 70 | 46.470 | 43.155 | 40.178 | 37.499 | 35.082 | 32.898 | 30.919 | 70 |
| 71 | 46.884 | 43.502 | 40.470 | 37.744 | 35.288 | 33.071 | 31.065 | 71 |
| 72 | 47.292 | 43.845 | 40.756 | 37.984 | 35.490 | 33.240 | 31.207 | 72 |
| 73 | 47.696 | 44.182 | 41.038 | 38.220 | 35.687 | 33.405 | 31.345 | 73 |
| 74 | 48.095 | 44.514 | 41.315 | 38.451 | 35.879 | 33.566 | 31.479 | 74 |
| 75 | 48.489 | 44.842 | 41.587 | 38.677 | 36.068 | 33.723 | 31.610 | 75 |
| 76 | 48.878 | 45.164 | 41.855 | 38.899 | 36.252 | 33.876 | 31.737 | 76 |
| 77 | 49.262 | 45.482 | 42.118 | 39.117 | 36.432 | 34.025 | 31.861 | 77 |
| 78 | 49.642 | 45.795 | 42.376 | 39.330 | 36.609 | 34.171 | 31.981 | 78 |
| 79 | 50.016 | 46.103 | 42.630 | 39.539 | 36.781 | 34.313 | 32.099 | 79 |
| 80 | 50.387 | 46.407 | 42.880 | 39.744 | 36.950 | 34.452 | 32.213 | 80 |
| 81 | 50.752 | 46.707 | 43.125 | 39.946 | 37.115 | 34.587 | 32.324 | 81 |
| 82 | 51.113 | 47.002 | 43.366 | 40.143 | 37.276 | 34.719 | 32.432 | 82 |
| 83 | 51.470 | 47.292 | 43.603 | 40.336 | 37.434 | 34.848 | 32.537 | 83 |
| 84 | 51.822 | 47.579 | 43.836 | 40.525 | 37.588 | 34.974 | 32.640 | 84 |
| 85 | 52.170 | 47.861 | 44.065 | 40.711 | 37.739 | 35.096 | 32.740 | 85 |
| 86 | 52.514 | 48.139 | 44.290 | 40.893 | 37.886 | 35.216 | 32.836 | 86 |
| 87 | 52.853 | 48.412 | 44.511 | 41.072 | 38.031 | 35.332 | 32.931 | 87 |
| 88 | 53.188 | 48.682 | 44.728 | 41.247 | 38.172 | 35.446 | 33.023 | 88 |
| 89 | 53.519 | 48.948 | 44.942 | 41.419 | 38.310 | 35.557 | 33.112 | 89 |
| 90 | 53.846 | 49.210 | 45.152 | 41.587 | 38.445 | 35.666 | 33.199 | 90 |
| 91 | 54.169 | 49.468 | 45.358 | 41.752 | 38.577 | 35.771 | 33.284 | 91 |
| 92 | 54.488 | 49.722 | 45.560 | 41.914 | 38.706 | 35.875 | 33.366 | 92 |
| 93 | 54.803 | 49.972 | 45.760 | 42.072 | 38.832 | 35.975 | 33.345 | 93 |
| 94 | 55.114 | 50.219 | 45.955 | 42.228 | 38.956 | 36.073 | 33.525 | 94 |
| 95 | 55.421 | 50.462 | 46.148 | 42.380 | 39.077 | 36.169 | 33.601 | 95 |
| 96 | 55.725 | 50.702 | 46.337 | 42.529 | 39.195 | 36.263 | 33.674 | 96 |
| 97 | 56.024 | 50.938 | 46.523 | 42.676 | 39.310 | 36.354 | 33.756 | 97 |
| 98 | 56.320 | 51.170 | 46.705 | 42.819 | 39.423 | 36.443 | 33.816 | 98 |
| 99 | 56.613 | 51.399 | 46.885 | 42.960 | 39.534 | 36.529 | 33.885 | 99 |
| 100 | 56.901 | 51.625 | 47.061 | 43.098 | 39.642 | 36.614 | 33.951 | 100 |

**FUTURE RENTALS**—*Continued*

| Yrs. | 3% | 3½% | 4% | 4½% | 5% | 5½% | 6% | 7% | 8% | Yrs. |
|---|---|---|---|---|---|---|---|---|---|---|
| 51 | 25.951 | 23.629 | 21.617 | 19.868 | 18.339 | 16.997 | 15.813 | 13.832 | 12.253 | 51 |
| 52 | 26.166 | 23.796 | 21.748 | 19.969 | 18.418 | 17.058 | 15.861 | 13.862 | 12.272 | 52 |
| 53 | 26.375 | 23.957 | 21.873 | 20.066 | 18.493 | 17.117 | 15.907 | 13.890 | 12.288 | 53 |
| 54 | 26.578 | 24.113 | 21.993 | 20.159 | 18.565 | 17.173 | 15.950 | 13.916 | 12.304 | 54 |
| 55 | 26.774 | 24.264 | 22.109 | 20.248 | 18.633 | 17.225 | 15.991 | 13.940 | 12.319 | 55 |
| 56 | 26.965 | 24.410 | 22.220 | 20.333 | 18.699 | 17.275 | 16.029 | 13.963 | 12.332 | 56 |
| 57 | 27.151 | 24.550 | 22.327 | 20.414 | 18.761 | 17.332 | 16.065 | 13.984 | 12.344 | 57 |
| 58 | 27.331 | 24.686 | 22.430 | 20.492 | 18.820 | 17.367 | 16.099 | 14.003 | 12.356 | 58 |
| 59 | 27.506 | 24.818 | 22.528 | 20.567 | 18.876 | 17.410 | 16.131 | 14.022 | 12.367 | 59 |
| 60 | 27.676 | 24.945 | 22.623 | 20.638 | 18.929 | 17.450 | 16.161 | 14.039 | 12.377 | 60 |
| 61 | 27.840 | 25.067 | 22.715 | 20.706 | 18.980 | 17.488 | 16.190 | 14.055 | 12.386 | 61 |
| 62 | 28.000 | 25.186 | 22.803 | 20.772 | 19.029 | 17.524 | 16.217 | 14.070 | 12.394 | 62 |
| 63 | 28.156 | 25.300 | 22.887 | 20.834 | 19.075 | 17.558 | 16.242 | 14.084 | 12.402 | 63 |
| 64 | 28.306 | 25.411 | 22.969 | 20.894 | 19.119 | 17.591 | 16.266 | 14.098 | 12.409 | 64 |
| 65 | 28.453 | 25.518 | 23.047 | 20.951 | 19.161 | 17.622 | 16.289 | 14.110 | 12.416 | 65 |
| 66 | 28.595 | 25.621 | 23.122 | 21.006 | 19.201 | 17.651 | 16.310 | 14.121 | 12.422 | 66 |
| 67 | 28.733 | 25.721 | 23.194 | 21.058 | 19.239 | 17.679 | 16.331 | 14.132 | 12.428 | 67 |
| 68 | 28.867 | 25.817 | 23.264 | 21.108 | 19.275 | 17.705 | 16.350 | 14.142 | 12.433 | 68 |
| 69 | 28.997 | 25.910 | 23.330 | 21.156 | 19.310 | 17.730 | 16.368 | 14.152 | 12.438 | 69 |
| 70 | 29.123 | 26.000 | 23.395 | 21.202 | 19.343 | 17.753 | 16.385 | 14.160 | 12.443 | 70 |
| 71 | 29.246 | 26.087 | 23.456 | 21.246 | 19.374 | 17.776 | 16.401 | 14.169 | 12.447 | 71 |
| 72 | 29.365 | 26.171 | 23.516 | 21.288 | 19.404 | 17.797 | 16.416 | 14.176 | 12.451 | 72 |
| 73 | 29.481 | 26.253 | 23.573 | 21.328 | 19.432 | 17.817 | 16.430 | 14.183 | 12.455 | 73 |
| 74 | 29.592 | 26.331 | 23.628 | 21.367 | 19.459 | 17.836 | 16.443 | 14.190 | 12.458 | 74 |
| 75 | 29.702 | 26.407 | 23.680 | 21.404 | 19.485 | 17.854 | 16.456 | 14.196 | 12.461 | 75 |
| 76 | 29.807 | 26.480 | 23.731 | 21.439 | 19.509 | 17.871 | 16.468 | 14.202 | 12.464 | 76 |
| 77 | 29.910 | 26.551 | 23.780 | 21.473 | 19.533 | 17.887 | 16.479 | 14.208 | 12.467 | 77 |
| 78 | 30.010 | 26.619 | 23.827 | 21.505 | 19.555 | 17.903 | 16.490 | 14.213 | 12.469 | 78 |
| 79 | 30.107 | 26.685 | 23.872 | 21.536 | 19.576 | 17.917 | 16.500 | 14.218 | 12.471 | 79 |
| 80 | 30.201 | 26.749 | 23.915 | 21.565 | 19.596 | 17.931 | 16.509 | 14.222 | 12.474 | 80 |
| 81 | 30.292 | 26.810 | 23.957 | 21.593 | 19.615 | 17.944 | 16.518 | 14.224 | 12.476 | 81 |
| 82 | 30.381 | 26.870 | 23.997 | 21.620 | 19.634 | 17.956 | 16.526 | 14.228 | 12.477 | 82 |
| 83 | 30.466 | 26.927 | 24.035 | 21.646 | 19.651 | 17.968 | 16.534 | 14.232 | 12.478 | 83 |
| 84 | 30.550 | 26.983 | 24.072 | 21.671 | 19.667 | 17.979 | 16.542 | 14.235 | 12.480 | 84 |
| 85 | 30.631 | 27.037 | 24.109 | 21.895 | 19.684 | 17.990 | 16.549 | 14.238 | 12.482 | 85 |
| 86 | 30.710 | 27.089 | 24.142 | 21.717 | 19.698 | 18.001 | 16.555 | 14.241 | 12.483 | 86 |
| 87 | 30.786 | 27.139 | 24.175 | 21.739 | 19.713 | 18.010 | 16.562 | 14.244 | 12.484 | 87 |
| 88 | 30.861 | 27.187 | 24.207 | 21.760 | 19.726 | 18.019 | 16.568 | 14.247 | 12.485 | 88 |
| 89 | 30.933 | 27.234 | 24.237 | 21.780 | 19.739 | 18.027 | 16.573 | 14.250 | 12.486 | 89 |
| 90 | 31.002 | 27.279 | 24.267 | 21.799 | 19.752 | 18.035 | 16.579 | 14.253 | 12.488 | 90 |
| 91 | 31.070 | 27.323 | 24.295 | 21.817 | 19.764 | 18.043 | 16.584 | 14.255 | 12.488 | 91 |
| 92 | 31.136 | 27.365 | 24.322 | 21.834 | 19.775 | 18.051 | 16.588 | 14.257 | 12.489 | 92 |
| 93 | 31.200 | 27.406 | 24.348 | 21.852 | 19.786 | 18.058 | 16.593 | 14.259 | 12.490 | 93 |
| 94 | 31.263 | 27.445 | 24.373 | 21.867 | 19.796 | 18.064 | 16.597 | 14.261 | 12.491 | 94 |
| 95 | 31.323 | 27.484 | 24.398 | 21.883 | 19.806 | 18.069 | 16.601 | 14.263 | 12.492 | 95 |
| 96 | 31.381 | 27.520 | 24.420 | 21.897 | 19.815 | 18.075 | 16.605 | 14.264 | 12.492 | 96 |
| 97 | 31.438 | 27.556 | 24.443 | 21.911 | 19.823 | 18.081 | 16.608 | 14.265 | 12.493 | 97 |
| 98 | 31.494 | 27.590 | 24.464 | 21.924 | 19.832 | 18.086 | 16.611 | 14.266 | 12.493 | 98 |
| 99 | 31.547 | 27.623 | 24.485 | 21.937 | 19.840 | 18.091 | 16.614 | 14.267 | 12.493 | 99 |
| 100 | 31.599 | 27.655 | 24.505 | 21.950 | 19.848 | 18.096 | 16.618 | 14.269 | 12.494 | 100 |

## TABLE II—COMPOUND INTEREST

The following compound interest table showing the present worth of a dollar payable hereafter will be found useful in determining the worth of interests, arising under long term leases. For example, what is the value of $5000 rent payable ten years hereafter, money being worth 6 per cent payable annually? The factor at 6 per cent for ten years of one dollar is $.558395, which multiplied by $5000 equals $2791.97. This table may also be used when interest is compounded semi-annually by doubling the period and dividing the rate by two. Thus, to find the factor for 20 years at 6 per cent compounded semi-annually, use factor $.306557 (factor for 40 years at 3 per cent).

### PRESENT WORTH OF $1 FOR ANY TIME FROM 1 TO 100 YEARS AT

| Years | 1% | 1¼% | 1½% | 2% | 2½% | 3% |
|---|---|---|---|---|---|---|
| 1 | .990099 | .987654 | .985222 | .980392 | .975610 | .970874 |
| 2 | .980296 | .975461 | .970662 | .961169 | .951814 | .942596 |
| 3 | .970590 | .963418 | .956317 | .942322 | .928599 | .915142 |
| 4 | .960980 | .951524 | .942184 | .923845 | .905951 | .888487 |
| 5 | .951466 | .939777 | .928260 | .905731 | .883854 | .862609 |
| 6 | .942045 | .928175 | .914542 | .887971 | .862297 | .837484 |
| 7 | .932718 | .916716 | .901027 | .870560 | .841265 | .813092 |
| 8 | .923483 | .905398 | .887711 | .853490 | .820747 | .789409 |
| 9 | .914340 | .894221 | .874592 | .836755 | .800728 | .769417 |
| 10 | .905287 | .883181 | .861667 | .820348 | .781198 | .744094 |
| 11 | .896324 | .872277 | .848933 | .804263 | .762145 | .722421 |
| 12 | .887449 | .861509 | .836387 | .788493 | .743556 | .701380 |
| 13 | .878663 | .850873 | .824027 | .773033 | .725420 | .680951 |
| 14 | .869963 | .840368 | .811849 | .757875 | .707727 | .661118 |
| 15 | .861349 | .829993 | .799852 | .743015 | .690466 | .641862 |
| 16 | .852821 | .819746 | .788031 | .728446 | .673625 | .623167 |
| 17 | .844377 | .809626 | .776385 | .714163 | .657195 | .605016 |
| 18 | .836017 | .799631 | .764912 | .700159 | .641166 | .587395 |
| 19 | .827740 | .789759 | .753607 | .686431 | .625528 | .570286 |
| 20 | .819544 | .780009 | .742470 | .672971 | .610271 | .533676 |
| 21 | .811430 | .770379 | .731498 | .659776 | .595386 | .537149 |
| 22 | .803396 | .760868 | .720688 | .646839 | .580865 | .521893 |
| 23 | .795442 | .751475 | .710037 | .644156 | .566697 | .506692 |
| 24 | .787566 | .742197 | .699544 | .621721 | .552875 | .491934 |
| 25 | .779768 | .733034 | .689206 | .609531 | .539391 | .477606 |
| 26 | .772048 | .723984 | .679021 | .597579 | .526235 | .463695 |
| 27 | .764404 | .715046 | .668986 | .585862 | .513400 | .450189 |
| 28 | .756836 | .706219 | .659099 | .574375 | .500878 | .437077 |
| 29 | .749342 | .697500 | .649359 | .563112 | .488661 | .424346 |
| 30 | .741923 | .688889 | .639762 | .552071 | .476743 | .411987 |
| 31 | .734577 | .680384 | .630308 | .541246 | .465115 | .399987 |
| 32 | .727304 | .671984 | .620993 | .530633 | .453771 | .388337 |
| 33 | .720103 | .663688 | .611816 | .520229 | .442703 | .377026 |
| 34 | .712973 | .665494 | .602774 | .510028 | .431905 | .366045 |
| 35 | .705914 | .647402 | .593866 | .500028 | .421371 | .355383 |
| 36 | .698925 | .639409 | .585090 | .490223 | .411094 | .345032 |
| 37 | .692005 | .631515 | .576443 | .480611 | .401067 | .334983 |
| 38 | .685153 | .623719 | .567924 | .471187 | .391285 | .325226 |
| 39 | .678370 | .616019 | .559531 | .461948 | .381741 | .315754 |
| 40 | .671653 | .608413 | .551262 | .452890 | .372431 | .306557 |
| 41 | .665003 | .600902 | .543116 | .444010 | .363347 | .297628 |
| 42 | .658419 | .593484 | .535089 | .435304 | .354485 | .288959 |
| 43 | .651900 | .586157 | .527182 | .426769 | .345839 | .280543 |
| 44 | .645445 | .578920 | .519391 | .418401 | .337404 | .272372 |
| 45 | .639055 | .571773 | .511715 | .410197 | .329174 | .264439 |

## TABLE II (Continued)

| Years | 1% | 1¼% | 1½% | 2% | 2½% | 3% |
|---|---|---|---|---|---|---|
| 46 | .632728 | .564714 | .504153 | .402154 | .321146 | .256737 |
| 47 | .626463 | .557742 | .496702 | .394268 | .313313 | .249259 |
| 48 | .620260 | .550856 | .489362 | .386538 | .305671 | .241999 |
| 49 | .614119 | .544056 | .482130 | .378958 | .298216 | .234950 |
| 50 | .608039 | .537339 | .475005 | .371518 | .290942 | .228107 |
| 51 | .602019 | .530705 | .467985 | .364243 | .283846 | .221463 |
| 52 | .596058 | .524153 | .461069 | .357101 | .276923 | .215013 |
| 53 | .590156 | .517682 | .454255 | .350099 | .270169 | .208750 |
| 54 | .584313 | .511291 | .447542 | .343234 | .263579 | .202670 |
| 55 | .578528 | .504979 | .440928 | .336504 | .257151 | .196767 |
| 56 | .572800 | .498745 | .434412 | .329906 | .250879 | .191036 |
| 57 | .567189 | .492587 | .427992 | .323437 | .244760 | .185472 |
| 58 | .561514 | .486506 | .421667 | .317095 | .238790 | .180069 |
| 59 | .555954 | .480500 | .415435 | .310878 | .232966 | .174825 |
| 60 | .550450 | .474568 | .409296 | .304782 | .227284 | .169733 |
| 61 | .545000 | .468709 | .403247 | .298806 | .221740 | .164789 |
| 62 | .539604 | .462922 | .397288 | .292947 | .216332 | .159990 |
| 63 | .534261 | .457207 | .391417 | .287203 | .211055 | .153330 |
| 64 | .528971 | .451563 | .385632 | .281572 | .205908 | .150806 |
| 65 | .523734 | .445988 | .379933 | .276051 | .200886 | .146413 |
| 66 | .518548 | .440482 | .374318 | .270638 | .195986 | .142149 |
| 67 | .513414 | .435044 | .368787 | .265331 | .191206 | .138009 |
| 68 | .508331 | .429673 | .363337 | .260129 | .186542 | .133989 |
| 69 | .503298 | .424368 | .357967 | .255028 | .181992 | .130086 |
| 70 | .498315 | .419129 | .352677 | .250028 | .177554 | .126290 |
| 71 | .493381 | .413955 | .347465 | .245125 | .173223 | .122619 |
| 72 | .488496 | .408844 | .342330 | .240319 | .168998 | .119047 |
| 73 | .483659 | .403797 | .337271 | .235607 | .164876 | .115580 |
| 74 | .478871 | .398811 | .332287 | .230987 | .160855 | .112214 |
| 75 | .474129 | .393888 | .327376 | .226458 | .156931 | .108945 |
| 76 | .469435 | .389025 | .322538 | .222017 | .153104 | .105772 |
| 77 | .464787 | .384222 | .317771 | .217664 | .149370 | .102691 |
| 78 | .460185 | .379479 | .313075 | .213396 | .145726 | .099700 |
| 79 | .455629 | .374794 | .308449 | .209212 | .142172 | .096796 |
| 80 | .451118 | .370167 | .303890 | .205110 | .138705 | .093977 |
| 81 | .446651 | .365597 | .299399 | .201088 | .135322 | .091240 |
| 82 | .442229 | .361083 | .294975 | .197145 | .132021 | .088582 |
| 83 | .437851 | .356625 | .290615 | .193879 | .128801 | .086002 |
| 84 | .433515 | .352223 | .286321 | .189490 | .125659 | .083497 |
| 85 | .429223 | .347874 | .282089 | .185774 | .122595 | .081065 |
| 86 | .424974 | .343580 | .277920 | .182132 | .119605 | .078704 |
| 87 | .420766 | .339338 | .273813 | .178560 | .116687 | .076412 |
| 88 | .416600 | .335148 | .269767 | .175059 | .113841 | .074186 |
| 89 | .412475 | .331011 | .265780 | .171627 | .111065 | .072026 |
| 90 | .408391 | .326924 | .261852 | .168261 | .108356 | .069928 |
| 91 | .404348 | .322888 | .257982 | .164962 | .105713 | .067891 |
| 92 | .400344 | .318902 | .254170 | .161728 | .103135 | .065914 |
| 93 | .396380 | .314965 | .250414 | .158556 | .100619 | .063994 |
| 94 | .392456 | .311076 | .246713 | .155448 | .098165 | .062130 |
| 95 | .388570 | .307236 | .243067 | .152400 | .095771 | .060320 |
| 96 | .384723 | .303443 | .239475 | .149411 | .093435 | .058563 |
| 97 | .381914 | .299697 | .235936 | .146482 | .091156 | .056858 |
| 98 | .377142 | .295997 | .232449 | .143609 | .088933 | .055202 |
| 99 | .373408 | .292342 | .229014 | .140794 | .086764 | .053594 |
| 100 | .369711 | .288733 | .225629 | .138033 | .084647 | .052033 |

## TABLE II (Continued)

| Years | 4% | 5% | 6% | 7% | 8% |
|---|---|---|---|---|---|
| 1 | .961538 | .952381 | .943396 | .934579 | .925925 |
| 2 | .924556 | .907029 | .889996 | .873438 | .857338 |
| 3 | .888996 | .863838 | .839619 | .816297 | .793832 |
| 4 | .854804 | .822702 | .792094 | .762895 | .735029 |
| 5 | .821927 | .783526 | .747258 | .712986 | .680582 |
| 6 | .790315 | .746215 | .704961 | .666342 | .630169 |
| 7 | .759918 | .710681 | .665057 | .622749 | .583490 |
| 8 | .730690 | .676839 | .627412 | .582008 | .540268 |
| 9 | .702587 | .644609 | .591898 | .543933 | .500248 |
| 10 | .675564 | .613913 | .558395 | .508349 | .463193 |
| 11 | .649581 | .584679 | .526788 | .475092 | .428882 |
| 12 | .624597 | .556837 | .496969 | .444011 | .397113 |
| 13 | .600574 | .530321 | .468839 | .414964 | .367697 |
| 14 | .577475 | .505068 | .442301 | .387817 | .340460 |
| 15 | .555265 | .481017 | .417265 | .362445 | .315241 |
| 16 | .533908 | .458112 | .393646 | .338734 | .291890 |
| 17 | .513373 | .426297 | .371364 | .316574 | .270268 |
| 18 | .493628 | .415521 | .350344 | .295863 | .250248 |
| 19 | .474642 | .395734 | .330513 | .276508 | .231711 |
| 20 | .456387 | .376889 | .311805 | .258418 | .214547 |
| 21 | .438834 | .358942 | .294155 | .241512 | .198655 |
| 22 | .421955 | .341850 | .277505 | .225712 | .183940 |
| 23 | .405726 | .325571 | .261797 | .210946 | .170314 |
| 24 | .390121 | .310068 | .246979 | .197146 | .157699 |
| 25 | .375117 | .295303 | .232999 | .184249 | .146017 |
| 26 | .360689 | .281241 | .219810 | .172195 | .135201 |
| 27 | .346817 | .267848 | .207368 | .160930 | .125186 |
| 28 | .333477 | .255094 | .195630 | .150402 | .115913 |
| 29 | .320651 | .242946 | .184557 | .140562 | .107327 |
| 30 | .308319 | .231377 | .174110 | .131366 | .099377 |
| 31 | .296460 | .220360 | .164255 | .122772 | .092015 |
| 32 | .285058 | .209866 | .154957 | .114740 | .085199 |
| 33 | .274094 | .199873 | .146186 | .107234 | .078888 |
| 34 | .263552 | .190355 | .137912 | .100219 | .073045 |
| 35 | .253615 | .181290 | .130105 | .093662 | .067634 |
| 36 | .243669 | .172657 | .122741 | .087535 | .062624 |
| 37 | .234297 | .164436 | .115793 | .081808 | .057985 |
| 38 | .225235 | .156605 | .109239 | .076456 | .053690 |
| 39 | .216621 | .149148 | .103056 | .071454 | .049713 |
| 40 | .208289 | .142046 | .097222 | .066780 | .046030 |
| 41 | .200278 | .135282 | .091719 | .062411 | .042621 |
| 42 | .192575 | .128840 | .086527 | .058328 | .039463 |
| 43 | .185168 | .122704 | .081630 | .054512 | .036540 |
| 44 | .178046 | .116861 | .077009 | .050946 | .033833 |
| 45 | .171198 | .111297 | .072650 | .047613 | .031327 |

## TABLE II (Continued)

| Years | 4% | 5% | 6% | 7% | 8% |
|---|---|---|---|---|---|
| 46 | .164614 | .105997 | .068538 | .044498 | .029007 |
| 47 | .158283 | .100949 | .064658 | .041587 | .026858 |
| 48 | .152195 | .096942 | .060998 | .038866 | .024868 |
| 49 | .146341 | .091564 | .057546 | .036324 | .023026 |
| 50 | .140713 | .087204 | .054288 | .033947 | .021321 |
| 51 | .135301 | .083051 | .051215 | .031726 | .019741 |
| 52 | .130097 | .079096 | .048316 | .029651 | .018279 |
| 53 | .125093 | .075330 | .045581 | .027711 | .016925 |
| 54 | .120282 | .071743 | .043001 | .025898 | .015671 |
| 55 | .115656 | .068326 | .040567 | .024204 | .014510 |
| 56 | .111207 | .065073 | .038270 | .022620 | .013435 |
| 57 | .106930 | .061974 | .036104 | .021140 | .012440 |
| 58 | .102817 | .059023 | .034061 | .019757 | .011519 |
| 59 | .098863 | .056212 | .032133 | .018465 | .010665 |
| 60 | .095060 | .053536 | .030314 | .017257 | .009875 |
| 61 | .091414 | .050986 | .028598 | .016128 | .009144 |
| 62 | .087889 | .048558 | .026979 | .015073 | .008466 |
| 63 | .084508 | .046246 | .025452 | .014087 | .007839 |
| 64 | .081258 | .044044 | .024011 | .013165 | .007259 |
| 65 | .078133 | .041946 | .022652 | .012304 | .006721 |
| 66 | .075128 | .039949 | .021370 | .011499 | .006223 |
| 67 | .072238 | .038047 | .020160 | .010746 | .005762 |
| 68 | .069460 | .036225 | .019019 | .010043 | .005335 |
| 69 | .066788 | .034509 | .017942 | .009386 | .004940 |
| 70 | .064219 | .032866 | .016927 | .008772 | .004574 |
| 71 | .061749 | .031301 | .015969 | .008198 | .004235 |
| 72 | .059374 | .029811 | .015065 | .007662 | .003921 |
| 73 | .057091 | .028391 | .014212 | .007161 | .003631 |
| 74 | .054895 | .027039 | .013407 | .006692 | .003362 |
| 75 | .052784 | .025752 | .012649 | .006254 | .003113 |
| 76 | .050754 | .024225 | .011933 | .005845 | .002882 |
| 77 | .048801 | .023357 | .011257 | .005463 | .002669 |
| 78 | .046924 | .022245 | .010620 | .005105 | .002471 |
| 79 | .045120 | .021186 | .010019 | .004771 | .002288 |
| 80 | .043384 | .020177 | .009452 | .004459 | .002118 |
| 81 | .041716 | .019216 | .008917 | .004167 | .001961 |
| 82 | .040111 | .018301 | .008412 | .003895 | .001816 |
| 83 | .038569 | .017430 | .007936 | .003640 | .001681 |
| 84 | .037085 | .016600 | .007486 | .003402 | .001557 |
| 85 | .035659 | .015809 | .007063 | .003179 | .001442 |
| 86 | .034287 | .015056 | .006663 | .002971 | .001335 |
| 87 | .032969 | .014339 | .006286 | .002777 | .001236 |
| 88 | .031701 | .013657 | .005930 | .002595 | .001144 |
| 89 | .030481 | .013006 | .005594 | .002425 | .001059 |
| 90 | .029309 | .012387 | .005277 | .002267 | .000981 |
| 91 | .028102 | .011797 | .004979 | .002118 | .000908 |
| 92 | .027098 | .011235 | .004697 | .001980 | .000841 |
| 93 | .026056 | .010700 | .004431 | .001850 | .000779 |
| 94 | .025053 | .010190 | .004180 | .001729 | .000721 |
| 95 | .024090 | .009705 | .003944 | .001616 | .000667 |
| 96 | .023163 | .009243 | .003720 | .001510 | .000618 |
| 97 | .022272 | .008803 | .003510 | .001411 | .000572 |
| 98 | .021416 | .008384 | .003311 | .001319 | .000530 |
| 99 | .020592 | .007985 | .003124 | .001233 | .000490 |
| 100 | .019800 | .007604 | .002947 | .001152 | .000454 |

## COMPARISON OF DEPTH TABLE

*(Copied from "City Growth and Values" by Stanley L. McMichael and Robert F. Bingham).*

*This table has been compiled for comparison, showing the relative values of lots of varying depths in business districts. All but two of these tables consider the standard lot to be 100 feet deep in a business district. The Lindsey-Bernard rule and the Pleydell rule consider the standard to be 150 feet. Lots of less depth than the standard of 100 feet are graded in value less according to the percentage indicated in the table, and lots in excess of the standard are graded in value higher according to the percentage indicated.*

| Feet in Depth | 4-3-2-1 | Hoffman | Hoffman Neill | Newark Rule | Lindsey-Bernard | Somers | Chicago | Milwaukee | Harper-Edgar | Davies-N. Y. | Cleveland | Martin-Chicago | McMichael Bingham Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 | 9.4 | ...... | 17 | ...... | 9 | 14.35 | 14.9 | 17 | 23.0 | 12.6 | 14.35 | 14.95 | 15.28 |
| 10 | 17.8 | 16 | 26 | 25 | 15 | 25 | 19.9 | 28 | 31.0 | 21.7 | 25 | 19.90 | 25.13 |
| 15 | 25.6 | 23.5 | 33 | ...... | 21 | 33.22 | 25.0 | 37 | 39.0 | 29.2 | 33.22 | 24.75 | 30.36 |
| 20 | 33 | 31 | 39 | 42 | 27 | 41 | 30.1 | 44 | 45.0 | 35.8 | 41. | 29.6 | 36.95 |
| 25 | 40 | 37.5 | 44 | ...... | 33 | 47.9 | 34.3 | 49 | 50. | 41.7 | 47.9 | 34.35 | 42.67 |
| 30 | 46.7 | 44 | 49 | 58 | 38.5 | 54. | 39.9 | 54 | 55. | 47.1 | 54. | 39.1 | 48.28 |
| 35 | 53.1 | 50 | 54 | ...... | 44 | 59.2 | ...... | 59 | ...... | 52.1 | 59.2 | 43.75 | ...... |
| 40 | 59.1 | 56 | 58 | 68 | 49 | 64 | 48.8 | 63 | 63. | 56.8 | 64. | 48.40 | 58.11 |
| 45 | 64.7 | 61.5 | 63 | ...... | 54 | 68.45 | ...... | 67 | ...... | 61.3 | 68.45 | 52.95 | ...... |
| 50 | 70 | 67 | 67 | 75 | 58.5 | 72.5 | 57.5 | 70 | 70.5 | 65.4 | 72.5 | 57.5 | 66.99 |
| 55 | 74.9 | 71.5 | 71 | ...... | 63 | 76.2 | ...... | 74 | ...... | 69.4 | 76.2 | 61.95 | ...... |
| 60 | 79.4 | 76 | 74 | 80 | 67 | 79.5 | 67.0 | 77 | 77.5 | 73.4 | 79.5 | 66.4 | 74.97 |
| 65 | 83.4 | 80 | 78 | ...... | 70.6 | 82.61 | ...... | 80 | ...... | 77.1 | 82.61 | 70.75 | ...... |
| 70 | 86.9 | 84 | 81 | 85 | 73.9 | 85.6 | 76.0 | 84 | 83.6 | 80.6 | 85.6 | 75.10 | 82.24 |
| 75 | 90 | 87.5 | 84 | ...... | 76.9 | 88.3 | 79.3 | 87 | 86.6 | 84.1 | 88.3 | 79.35 | ...... |
| 80 | 92.22 | 91 | 88 | 90 | 79.6 | 90.9 | 84.0 | 90 | 89.4 | 87.6 | 90.9 | 83.60 | 88.76 |
| 85 | 94.22 | 93.5 | 91 | ...... | 82 | 93.33 | ...... | 93 | ...... | 91 | 93.33 | 87.75 | ...... |
| 90 | 96.17 | 96 | 94 | 95 | 84.2 | 95.6 | 92.2 | 95 | 95. | 94. | 95.6 | 91.90 | 94.55 |
| 95 | 98.1 | 98 | 97 | ...... | 86.2 | 97.85 | ...... | 98 | ...... | 97. | 97.85 | 95.95 | ...... |
| 100 | 100. | 100. | 100 | 100 | 88 | 100. | 100. | 100 | 100. | 100. | 100. | 100. | 100. |
| 105 | 101.89 | ...... | ...... | ...... | 89.6 | 102.08 | ...... | 102 | ...... | 103. | 102.08 | 103.95 | ...... |
| 110 | 103.76 | ...... | ...... | 104 | 91.1 | 104 | 108 | 103 | 105 | 106 | 104 | 107.90 | 105.2 |
| 115 | 105.585 | ...... | ...... | ...... | 92.5 | 105.78 | ...... | 105 | ...... | 108.7 | 105.78 | 111.75 | ...... |
| 120 | 107.35 | ...... | ...... | 108 | 93.8 | 107.5 | 116 | 107 | 109.5 | 111.2 | 107.5 | 115.6 | 110.2 |
| 125 | 109 | ...... | 112 | ...... | 95 | 109.05 | 119.3 | 109 | 112.6 | 113.7 | 109.05 | 119.35 | 112.56 |
| 130 | 110.6 | ...... | ...... | 112 | 96.1 | 110.5 | ...... | 110 |  | 116.2 | 110.5 | 123.10 | ...... |

## COMPARISON OF DEPTH TABLE—Continued

| Feet in Depth | 4-3-2-1 | Hoffman | Hoffman Neill | Newark Rule | Lindsey-Bernard | Somers | Chicago | Milwaukee | Harper-Edgar | Davies-N. Y. | Cleveland | Martin-Chicago | McMichael Bingham Average |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 135 | 112.2 | . | ... | ...... | 97.2 | 111.8 | .... | 112 | ..... | 118.7 | 111.8 | 126.75 | |
| 140 | 113.8 | | ..... | 116 | 98.2 | 113 | 131.0 | 113 | 118.2 | 121.2 | 113 | 130.40 | |
| 145 | 115.4 | ... | .... | .... | 99.2 | 114.05 | .. .. | 114 | ... | 123.7 | 114.05 | 133.95 | |
| 150 | 117 | . | 118 | 120 | 100 | 115 | 137.5 | 115 | 122.4 | 126.2 | 115 | 137.50 | 123.73 |
| 155 | 118.4 | .. .. | ...... | ...... | .. . | ...... | .... | 116 | ... .. | 128.7 | 115.95 | 140.95 | . |
| 160 | 119.8 | .. . | ...... | 124 | ... | ...... | 145.0 | 117 | 126.4 | 131.2 | 116.8 | 144.40 | |
| 165 | 121.2 | .. ... | ...... | ...... | .... | ...... | ..... | 118 | ... .. | 133.7 | 117.64 | 147.75 | |
| 170 | 122.6 | ...... | ...... | 127 | .... | ...... | ...... | 118 | ...... | 136.2 | 118.4 | 151.10 | |
| 175 | 124.0 | ...... | 122 | ...... | 103 | 119.14 | 154.5 | 119 | 132.3 | 138.7 | 119.14 | 154.35 | 131.44 |
| 180 | 125.2 | ...... | ...... | 129 | .... | ...... | 158.0 | 120 | 134.2 | 141.2 | 119.8 | 157.60 | |
| 185 | 126.4 | ...... | ...... | ...... | ... | ...... | ...... | 120 | ... .. | 143.2 | 120.43 | 160.75 | . |
| 190 | 127.6 | . .... | ...... | 131 | .... | ...... | ...... | 121 | ...... | 145.2 | 121 | 163.90 | . |
| 195 | 128.8 | . .... | ...... | ...... | .... | ...... | ...... | 122 | ...... | 147.2 | 121.53 | 166.95 | . |
| 200 | 130 | ...... | 125 | 133 | 105 | 122 | 170 | 122 | 141.4 | 149.2 | 122 | 170.00 | 139.07 |
| 250 | ...... | ...... | ...... | ...... | .... | ...... | ...... | 126 | 158 | ...... | 126.05 | ...... | ... |
| 300 | ...... | ...... | ...... | ...... | .... | ...... | ...... | .... | ... .. | ..... | 129.25 | ...... | . . |
| 350 | . .... | ...... | ...... | ...... | .... | ...... | ...... | .... | .... | ...... | 131.9 | ...... | . . |
| 400 | . .... | ...... | ...... | ..... | ... | ...... | ...... | ... | ..... | . . .. | 134.2 | . | |
| 450 | ... . | ...... | . ... | ..... | .. | ...... | ... . | .. . | .... | ... .. | 136.15 | ..... | |
| 500 | ...... | ..... | ... | .... . | .. | ...... | ...... | ..... | .... | .. | 137.85 | . .... | . . |
| 550 | ... ... | .... | ... .. | ...... | . | ...... | ..... | ... | ..... | . .... | 139.3 | ...... | |
| 600 | ...... | ...... | ..... | .. .. | ... | ...... | ...... | .... | ...... | ... | 140.55 | ... . | .... . |
| 650 | ...... | .... | ... .. | ...... | ... .. | ... .. | ... .. | ... | ... | . | 141.55 | . ... | . |
| 700 | . ..... | ........ | ...... | ...... | .... | ... | ..... | .... | ...... | .... | 142.35 | .. | |

## COMPARISON TABLE OF DEPTH PERCENTAGE FOR VALUING RESIDENTIAL LOTS

*These tables are for use in computing the comparative values of lots of varying depths in residential districts. The Newark rule assumes a lot to be of standard depth when it is* 100 *feet deep. The four other rules assume the standard depth to be* 120 *feet deep. Lots of less depth than the standard for each table are graded in value less according to the percentage indicated in the table and lots in excess of the standard are graded in value higher according to the percentages indicated.*

*For example: Assume a unit value of* $100 *a foot—the lot having a depth of* 100 *feet. According to the five rules the value per foot would be as follows:*

| RULE | PERCENTAGE | VALUE PER FOOT |
|---|---|---|
| Newark | 100 | $100 |
| Milwaukee | 92 | 92 |
| Janssens | 88 | 88 |
| Kings | 91.4 | 91.4 |
| Leenhouts | 88 | 88 |

If the lot were 120 feet deep, the values would be—assuming a unit value of $100 a foot:

| | | |
|---|---|---|
| Newark | 108 | $108 |
| Milwaukee | 100 | 100 |
| Janssens | 100 | 100 |
| Kings | 100 | 100 |
| Leenhouts | 100 | 100 |

Newark Rule from Assessors Manual of Jersey City, N. J.

Milwaukee, Janssens and Kings Curve from "The Valuation of Urban Realty for the Purposes of Taxation" by Willford Isbell King.

Leenhouts Rule from "Manual for Appraising Real Estate and Buildings" by George W. Close.

| Depth of Lot in Feet | Newark Rule | Milwaukee Rule | Janssens Curve | Kings Curve | Leenhouts Rule |
|---|---|---|---|---|---|
| 5 | | 9 | | | 6 |
| 10 | 15 | 17 | 12 | | 12 |
| 15 | | 24 | 18 | | 17 |
| 20 | 30 | 30 | 24 | | 23 |
| 25 | | 35 | 30 | | 28 |
| 30 | 45 | 40 | 35 | | 33 |
| 35 | | | | | 37 |
| 40 | 55 | 50 | 45 | 45.4 | 42 |
| 45 | | 55 | 49 | 51.7 | 47 |
| 50 | 65 | 60 | 52 | 57.3 | 51 |
| 55 | | 64 | 56 | 62.3 | 55 |
| 60 | 74 | 67 | 59 | 66.8 | 59 |
| 65 | | 71 | 64 | 70.9 | 63 |
| 70 | 83 | 75 | 68 | 74.6 | 67 |
| 75 | | 78 | 71 | 78.0 | 71 |
| 80 | 91 | 81 | 75 | 81.1 | 75 |
| 85 | | 84 | 78 | 83.9 | 78 |
| 90 | 96 | 87 | 82 | 86.5 | 82 |
| 95 | | 90 | 85 | 89.0 | 85 |
| 100 | 100 | 92 | 88 | 91.4 | 88 |
| 105 | | 95 | 91 | 93.7 | 92 |
| 110 | 104 | 97 | 94 | 95.9 | 95 |
| 115 | | 98 | 97 | 98.0 | 98 |
| 120 | 108 | 100 | 100 | 100.0 | 100 |
| 125 | | 101 | 102 | 101.9 | 102 |
| 130 | 112 | 102 | 104 | 103.7 | 103 |
| 135 | | 103 | 106 | 105.5 | 105 |
| 140 | 116 | 104 | 108 | 107.2 | 107 |
| 145 | | 104 | 110 | 108.9 | 108 |
| 150 | 120 | 105 | 112 | 110.5 | 109 |
| 155 | | 105 | 113.5 | 112.1 | 111 |
| 160 | 124 | 105 | 115 | | 112 |
| 165 | | 106 | 116.5 | | 113 |
| 170 | 127 | 106 | 118 | | 114 |
| 175 | | 107 | 119.5 | | 115 |
| 180 | 129 | 107 | 121 | | 116 |
| 185 | | 108 | 122.5 | | 117 |
| 190 | 131 | 109 | 124 | | 118 |
| 195 | | 110 | 125.5 | | 118 |
| 200 | 133 | 110 | 127.5 | | 119 |

## BUILDING DESCRIPTION RECORD

Taxing District.......................Map........Page.......

Owner..................................................

Number..................................................St.

Kind of Building..........................................

| | | Base Factor | Add or Deduct for Area | Actual Factor |
|---|---|---|---|---|
| Schedule...... | Class...... | ...... | ...... | ...... |

| Stories | Dimensions | Area | Actual Factor | Totals |
|---|---|---|---|---|
| .......... | ........X........ | .......... | .......... | .......... |
| .......... | ........X........ | .......... | .......... | .......... |

| Additions or Deductions for: | Add | Deduct | |
|---|---|---|---|
| Basement.................. | ...... | ...... | ...... |
| Siding.................. | ...... | ...... | ...... |
| Tile Roofing.................. | ...... | ...... | ...... |
| Dormers.................. | ...... | ...... | ...... |
| Bays.................. | ...... | ...... | ...... |
| Outside Chimney.................. | ...... | ...... | ...... |
| Porches.................. | ...... | ...... | ...... |
| Plaster.................. | ...... | ...... | ...... |
| Tile Floors.................. | ...... | ...... | ...... |
| Cabinets.................. | ...... | ...... | ...... |
| Mantels.................. | ...... | ...... | ...... |
| Plumbing.................. | ...... | ...... | ...... |
| Heating.................. | ...... | ...... | ...... |
| Total Addition or Reduction.......... | ...... | ...... | ...... |

| | |
|---|---|
| REPRODUCTION VALUE<br>Age yrs. Depreciation %=<br>NET VALUE | .......... |
| Garage Value..............................<br>TOTAL BLDG. VALUE | .......... |

Remarks..................................................

..........................................................

Original Record Appraised.............192..

File No..................

Year..... By....................

## LAND CALCULATION RECORD

Taxing District Card No

Dist.......... Map Block

Book No....... Page Line

**Listed for taxes in name of**

**192** ...............

**Subd**.................**Orig. Lot**

**Sub Lot**..........................................

**Feet Front**..............................**Street**

**Depth**................. **Acres** **House No.**

| Assessments | 192 | 192 | 192 |
|---|---|---|---|
| Land................. | | | |
| Bldgs | | | |
| Totals | | | |

**Instructions: Sketch odd shaped lots. Use square for others. Always place north end of lot toward top of card. Show unit values outside and lot measurements inside lot lines. Indicate corner influence and alley widths.**

| Feet Front | Feet Deep | % of Actual Unit | % for Tri-angle | % of C. I. Less Than $200 | Actual Unit | Totals | |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
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| | | | | | | | |

Written by.............Valued by.............Checked by.....

## BUILDING DESCRIPTION

**Examined**..............................................................., **192**....

**By**...........................................................................

**Number**..........................................................................**Street**

**Single House** **Two-Family House** **Double House** **Duplex House**
**Suite Terrace** **Suite Apartment** **Store** in building, addition

**Office, Bank, Theatre, Store, Hotel, Warehouse, Factory, Mill, Foundry, Commercial Garage, Shed**...................................................

**MATERIAL**—Shingles—Siding, lap, drop, wide.
Plaster—On frame, on masonry.
Brick—Solid, veneer, press, common.
Cement block, stone, metal, terra cotta.......................................

**FLOORS**—Joist. Mill construction, fireproof.

**FOUNDATION**—Brick, stone, cement block, concrete, tile, piers.

**ROOF**—Gable, hip, flat, gambrel, mansard. Number gables, dormers. Slate, wood shingle, tile, gravel, paper, asbestos, asphalt shingle, metal.

**CORNICE**—Wood, metal, stone, T. C., wide, narrow, plain, ornamental.

**PROJECTIONS**—One story, 2 story, 3 story, tower outside chimney.

**INSIDE FINISH**—Hardwood, pine, white enamel.
Mantel, China Cabinet, Book Case.

**BASEMENT OR CELLAR**—Under whole, under part. None.

**ATTIC**—Unfinished, plastered. No. of rooms. No attic.

**HEATING**—Stoves, hot air, hot water, steam, vapor.

**PLUMBING**—Bath room, toilet. None.

**AGE OF BUILDING**—........yrs—Stated, estimated, good, fair, bad repair. Closed, vacant, occupied by owner, tenant who furnished, refused information.

**OWNERS NAME**.......................................................................

**PORCH**—Wood, stone, brick, cement block....................X....................story

**SLEEPING PORCH**—Open, closed....................X....................story

| | | | | |
|---|---|---|---|---|
| **MAIN BLDG. Stories** | .............. | .............. | .............. | .............. |
| **DIMENSIONS**............ | ......X....... | ......X....... | ......X....... | ......X....... |
| | ......X...... | ......X...... | ......X...... | ......X...... |

**FACTOR**...........................................................................

**Barn, Shed, Garage**—Material..............................Size............X.......Story

Roof............Floor............Heat............Value $.......................

**Remarks**...........................................................................

.....................................................................................

.....................................................................................

| | | | | |
|---|---|---|---|---|
| **Depreciated Factor** | | | | |

## AFFIDAVIT OF COST OF BUILDING

(*An affidavit of cost as to the larger buildings should be on file in every tax office. No reduction should be made until filed.*)

(Must be signed by an officer of the Company)

.............................................., being ........................................of

The ..............................................Company, and first duly sworn, deposes

and says that the total cost of the..................story........................building at

..............................................was $......, itemized as follows:

| WORK | CONTRACTOR | AMOUNT | OTHER COSTS Kind | OTHER COSTS Amount |
|---|---|---|---|---|
| General contract........ | .................... | .......... | .................... | .......... |
| (This contract includes | items checked thus: | \ | .................... | .......... |
| Excavating.............. | .................... | .......... | .................... | .......... |
| Masonry................ | .................... | .......... | .................... | .......... |
| Cement work............ | .................... | .......... | .................... | .......... |
| Re-inforced concrete..... | .................... | .......... | Carrying charges pending construction: | |
| Steel and iron........... | .................... | .......... | | |
| Carpentry............... | .................... | .......... | | |
| Roofing................. | .................... | .......... | Kind: | |
| Heating and ventilating... | .................... | .......... | Maintenance..... | .......... |
| Plumbing and sewering.... | .................... | .......... | Rental.......... | .......... |
| Lathing and plastering.... | .................... | .......... | Interest......... | .......... |
| Painting and finishing..... | .................... | .......... | Total Cost...... | .......... |
| Electric wiring........... | .................... | .......... | | |
| Sheet metal............. | .................... | .......... | | |
| Steel sash and glazing..... | .................... | .......... | | |
| Marble and tile.......... | .................... | .......... | | |
| Hardware................ | .................... | .......... | | |
| Lighting fixtures.......... | .................... | .......... | | |
| Sprinkling system......... | .................... | .......... | | |
| Elevators................ | .................... | .......... | | |
| Cranes and runways....... | .................... | .......... | | |
| Power boilers and piping.. | .................... | .......... | | |
| Furnaces and ovens....... | .................... | .......... | | |
| Shafting................. | .................... | .......... | | |
| Other fixed equipment..... | .................... | .......... | | |
| Architect's fees.......... | .................... | .......... | | |

The above work was done on:
General contract basis......
Separate contract basis.....
Cost plus percentage.......
Direct labor...............

The above items include all labor, materials and extras in the construction of said building and represent all expenses incurred therein. All contracts and check books proving said figures are available at your call. The names of the contractors are given, whom you may interrogate and who are hereby authorized and requested to fully inform you in the matter.

(Signed)..................................

For The........................Company.

Sworn to before me and subscribed in my presence this...........day of........, 19.......

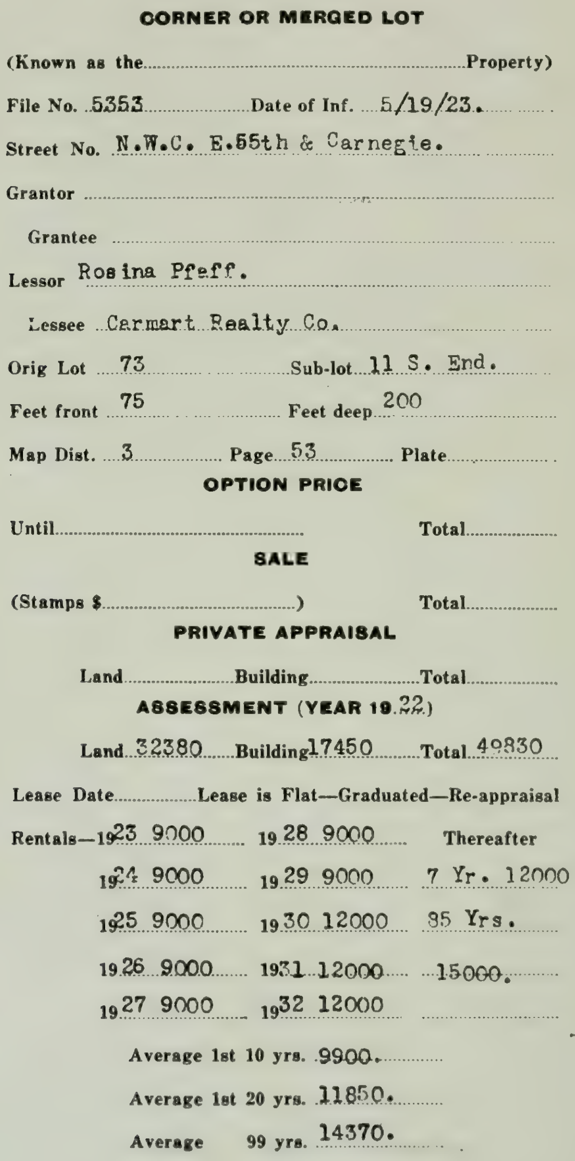
..................................

..................................

(Do not use the following)

| Building Permit No. | Date of Permit | Cubage | Factor | Cost | Assessed Value |
|---|---|---|---|---|---|
| .......... | ......19.... | ......Ft. | $ | $ | $ |

*Below is the form used in the assessor's office at Cleveland, Ohio, for transmuting a corner lot to a standard foot of an inside lot and then comparing it with the assessed value. It will be noticed that the value of the building is assumed to be approximately twice what it is assessed for, it being an old building and having been assessed at a pre-war figure. It will be noticed that the calculation on this hypothesis shows that E. 55th Street which is the main street is assessed at $225 and that the calculation*



**CORNER OR MERGED LOT**

(Known as the ........ Property)

File No. 5353 Date of Inf. 5/19/23.

Street No. N.W.C. E.55th & Carnegie.

Grantor

Grantee

Lessor Rosina Pfeff.

Lessee Carmart Realty Co.

Orig Lot 73 Sub-lot 11 S. End.

Feet front 75 Feet deep 200

Map Dist. 3 Page 53 Plate

**OPTION PRICE**

Until ........ Total ........

**SALE**

(Stamps $ ........) Total ........

**PRIVATE APPRAISAL**

Land ........ Building ........ Total ........

**ASSESSMENT (YEAR 1922)**

Land 32380 Building 17450 Total 49830

Lease Date ........ Lease is Flat—Graduated—Re-appraisal

| | | |
|---|---|---|
| Rentals—1923 9000 | 1928 9000 | Thereafter |
| 1924 9000 | 1929 9000 | 7 Yr. 12000 |
| 1925 9000 | 1930 12000 | 85 Yrs. |
| 1926 9000 | 1931 12000 | 15000. |
| 1927 9000 | 1932 12000 | |

Average 1st 10 yrs. 9900.

Average 1st 20 yrs. 11850.

Average 99 yrs. 14370.

*shows that it is worth about $900, even though the side street is assumed to be worth double its assessment in 1920. The evidence, therefore, is strong that a re-assessment of this particular property is necessary. The corner in the particular case considered is the northwest corner of E. 55th and Carnegie Avenue, the property being leased for 99 years, the lease calling for $9000 annually for seven years, $12,000 for ten years and $15,000 thereafter.*

### CORNER OR MERGED LOT

**Average rentals, 1st** 10 **years** $ 9900

**Less BUILDING VALUE:**

**assumed at $**35000 **@ 8%** $ 2800

**Net Land Rental** $ 7100

**Capitalized @ 6%** $ 118333

**Less REAR FRONTAGE:**

100 X 75 = 88.3 % X $300 = $ 26490.

**Less CORNER INFLUENCE:**

100 X 75 = 69 % X $350 = $ 24150.

**Less Land Value for**

**Parcel Wider than 100 ft:**

X = % X $ = $

**Total Deductions** $50640

**Inside Lot Land Value** $ 67693

**Divided by** 75 **ft. front = UNIT FOOT $**900

### UNITS COMPARED

| Street | Assessed | Recalc. | Assuming Building |
|---|---|---|---|
| Carnegie<br>Side | 150. | 350.<br>300. | Assessed at $17450. |
| E.55th.<br>Main | 225. | 900 | Value of $ 35000. |

## ASSESSMENT COMPLAINT

**NOTICE:** This complaint will be rejected unless there is a strict compliance with all the requirements herein.

An abatement will not be granted in case the LAND should be over-assessed, if the AGGREGATE assessment of LAND AND BUILDINGS is less than the true value of LAND AND BUILDINGS.

Complainant.................................. Complaint No............
Residence.................................. Attorney for Complainant,
Owner...................................... (if any)
Residence.................................. ..............................
Taxing District.............................. ..............................
(Twp., City, Village or Special School District)

Telephone............Residence......................Address......................

TO THE COUNTY BOARD OF REVISION:

Your complainant.., respectfully represent..;

That the Real Property described below, situate in said county and taxing district thereof is entered on the current tax list of said county in the name.. of.................................................................., and is described as follows:

DESCRIPTION

| CARD No. | Number of Acres | Allotment Subdivision | Original Lot | Sublot | Feet Front | House No. | Street |
|---|---|---|---|---|---|---|---|
| ...... | .......... | .......... | ...... | ...... | .......... | .......... | .................. |

| Complainant also represents: | LAND | BLDGS. | TOTAL | REMARKS |
|---|---|---|---|---|
| Old Assessment 192.... | .......... | .......... | .......... | .................... |
| New Assessment 192.... | .......... | .......... | .......... | .................... |
| Real Value | .......... | .......... | .......... | .................... |
| Decrease Asked | .......... | .......... | .......... | .................... |
| Amount of Mortgage | ✪✪✪✪✪ | ✪✪✪✪✪ | .......... | .................... |
| Will Sell for | ✪✪✪✪✪ | ✪✪✪✪✪ | .......... | .................... |
| Cost of Land, date........ | .......... | ✪✪✪✪✪ | ✪✪✪✪✪ | .................... |
| Cost of Building | .......... | .......... | ✪✪✪✪✪ | Date of Construction...... |
| Total Orig. Invest't,date..... | ✪✪✪✪✪ | ✪✪✪✪✪ | .......... | .................... |
| Insurance carried........... | ✪✪✪✪✪ | .......... | ✪✪✪✪✪ | .................... |
| Carried on Books at | .......... | .......... | .......... | .................... |

That said property was purchased (Date)................................, 19...., of .........................................., who resides at.......................... for a total consideration (either in trade or money) of $.................

That the mortgage incumbrance on said property is $.........and said mortgage is held by..................................................

That the buildings located on said land are described as follows:

(Underscore each word that describes the building)

**DWELLING**: Single, duplex, double house, apartment, store, warehouse, office building, factory, garage, theater.

**MATERIAL**: shingle—siding, lap, drop, wide. Plaster—on frame, on masonry. Brick—solid, veneer, press, common, cement block, stone.

**FOUNDATION**: brick, stone, cement block, tile, piers.

**ROOF**: gable, hip, flat, gamble, mansard—slate, shingle, tile, gravel, paper, asbestos, asphalt, metal—dormers, gables.

**CORNICE**: wood, metal, stone, T. C.—wide, narrow, plain, ornamental.

**PROJECTIONS**: one story, two story, three story, tower, outside chimney.

**INSIDE FINISH**: main part first story—hardwood, white enamel, pine. Upper story—hardwood, white enamel, pine.

**BASEMENT OR CELLAR**: Under whole house, under part. None.

**ATTIC**: unfinished, plastered, No. of rooms........ No attic.

**HEATING**: stoves, hot air, hot water, steam, vapor.

**PLUMBING FIXTURES**: Sink, W.C., wash bowl, bath tub, laundry trays, none.

**AGE OF BUILDING**:..............Actual, estimated. Condition good, fair, bad, repair.

**BUILDING**: Occupied, vacant, by owner, tenant.

**PORCH**: Wood, stone, brick, cement block.

**SLEEPING PORCH**: open, closed.

**STORIES HIGH**: ..............................

**DIMENSIONS**: ....x.... ....x.... ....x.... ....x....

**DESCRIPTION OF BUILDING OTHER ABOVE**................................

..........................................................................................

IF BUILDING IS NEW AND NOT HERETOFORE ASSESSED, ATTACH SPECIAL AFFIDAVIT OF COST

(Ask for Form I-B)

That a tender of payment of $.... has been made to the county treasurer representing the taxes on an assessment of $...............

That your complainant is aggrieved by said assessment for the following additional reasons: ..........................................................................................

Your complainant, therefore, prays that said assessment be corrected as above indicated and for such other relief as....he....may be entitled in the premises.

Notice of hearing on this complaint deposited in the post-office to my address three days prior to such hearing, in which notice the property may be described as herein set forth, shall be deemed reasonable notice, and any other or further notice is hereby waived.

(Signed)..............................
(Owner)

..............................

Sworn to and subscribed in my presence this......day of.........., 192..

.........................................., the above named complainant, being duly sworn, says that the statements and allegations contained in the above complaint are true.

..............................

**NOTICE**: This complaint must be signed and sworn to by owner.

## CONDENSED HANDY COST FACTORS APPLICABLE TO 90% OF DETACHED RESIDENCES

### ONE FAMILY DWELLING SCHEDULE—INDEX 150

| | Class 1 | Class 2 | Class 3 | Class 4 | Class 5 |
|---|---|---|---|---|---|
| Walls | Siding without Sheathing | Lap Siding | Lap Siding | Lap Siding | Wide Siding or Shingle |
| Basement | Small Cellar | Full Cement Bl'k. | Full Brick or Stone | Full Brick or Stone | Full Brick or Stone |
| Roof | Shingle | Shingle | Optional Except Tile | Optional Except Tile | Optional Except Tile |
| Attic | None | Unfinished | Unfinished | Unfinished | Plastered Undivided Area |
| **Projections** | None | None Except Porch | None Except Porch | 2 Dormers or Bays, Full Porch | 2 Dormers or Bays, Full Porch |
| Int. **Finish** | Pine Fin. & Fl. | Pine Fin. & Fl. | Pine Fin. & Oak Fl. | Hardwood & Enamel, Mantel, Features | Hardwood & Enamel, Mantel, Features |
| Plumbing | W. C. & K. **Sink** | 1 Bath, Wood Fl. | 1 Bath, Wood Fl. | 1 Bath, Wood Fl. | 1 Bath, Tile Fl. |
| Heating | Stoves | Stoves | H. A. Furnace | H. A. Furnace | Hot Water, Steam or Vapor |
| Area | Optional | Optional | 650 Sq. Ft. | 650 Sq. Ft. | 750 Sq. Ft. |
| Stories | 1 1½ **2** | 1 **1½ 2** | 1 1½ 2 | 1 1½ 2 | 1 1½ 2 |
| Frame | 1.50 2.20 2.70 | 2.40 3.70 4.50 | 3.60 4.80 5.40 | 4.80 5.70 6.30 | 5.60 6.90 7.50 |
| Brick | 1.70 2.50 3.00 | 2.70 4.20 5.00 | 4.00 5.30 6.00 | 5.20 6.30 6.90 | 6.20 7.50 8.20 |

## TWO FAMILY DWELLING SCHEDULE NO. 1-A—INDEX 150

| | Class 1 | Class 2 | Class 3 | Class 4 |
|---|---|---|---|---|
| Walls | Drop Siding | Lap Siding | Lap Siding | Wide Siding or Shingle |
| Basement | Full Cement Bl'k. | Full Cement Bl'k. | Full Brick or Stone | Full Brick or Stone |
| Roof | Shingle | Shingle | Optional Except Tile | Optional Except Tile |
| Attic | Unfinished | Unfinished | Unfinished | Finished 2 Rooms |
| Projections | None Except Porch | None Except Porch | 1 Two Story Bay and Porch | 2 Two Story Bays, Br. Porch, 2 Dormers, Outside Chimney |
| Int. Finish | Pine Fin. & Floor | Pine Fin. & Floor | Hardwood Floors and Fin. 1 Mantel Per Suite | Hardwood Floors and Fin. 1 Mantel Per Suite |
| Plumbing | 1 Bath Per Suite, Wood Floor | 1 Bath Per Suite, Wood Floor | 1 Bath Per Suite, Wood Floor | 1 Bath Per Suite, Tile Floors |
| Heating | Stoves | 2 H. A. Furnaces | 2 H. A. Furnaces | 2 H. A. Furnaces |
| Area | 900 Sq. Ft. | 1000 Sq. Ft. | 1000 Sq. Ft. | 1000-1300 Sq. Ft |
| Frame | 4.50 | 5.40 | 6.00 | 7.20 |
| Brick | 5.00 | 6.00 | 6.60 | 7.90 |

## DOUBLE DWELLING SCHEDULE NO. 1-B—INDEX 150

| | Class 1 | Class 2 | Class 3 |
|---|---|---|---|
| Walls | Lap Siding | Lap Siding | Pressed Brick, Wide Siding or Shingle |
| Basement | Full Cement Bl'k. | Full Brick or Stone | Full Brick or Stone |
| Roof | Shingle | Optional Except Tile | Optional Except Tile |
| Attic | Unfinished | Unfinished | Plastered, Undivided Area |
| Projections | None Except Porch | 4 Bays, 2 Dormers | 4 Bays, 2 Dormers, 10′ Porch |
| Int. Finish | Pine Finish and Floors | H. W. & Enamel, H. W. Floors | H. W. & Enamel, 2 Mantels, Built-in Features |
| Plumbing | 1 Bath Per Suite, Wood Floors | 1 Bath Per Suite, Wood Floors | 1 Bath, 1 Lav. Per Suite, Tile Floors |
| Heating | 2 Hot Air Furnaces | 2 Hot Air Furnaces | Hot Water, Steam or Vapor |
| Area | 1000 Sq. Ft. | 1200 Sq. Ft. | 1400 Sq. Ft. |
| Frame | 5.40 | 6.80 | 9.00 |
| Brick | 6.00 | 7.50 | 9.90 |

## MEASUREMENTS IN GENERAL USE

7.92 inches make 1 link.
25 links make 1 rod.
16.50 feet make 1 rod.
4 rods make 1 chain.
10 chains make 1 furlong.
8 furlongs make 1 mile.
320 rods make 1 mile.
5,280 feet make 1 mile.
10 square chains make 1 acre.
160 square rods make 1 acre.
640 acres make 1 square mile.
43,560 square feet make 1 acre.
60 geographical miles make 1 degree.
1,728 cubic inches make 1 cubic foot.
27 cubic feet make 1 cubic yard.
Gunter's chain, 22 yards of 100 links.
A section is 640 acres.
A township is 36 sections, each 1 square mile.
A span is 9 inches.
A hand—horse measurement—is 4 inches.
A knot—nautical—is 6,086 feet.
A fathom—nautical—is 6 feet.
A stone is 14 pounds.
A square acre is 208 7/10 feet on each side.

## CONTENTS OF FIELDS AND LOTS

220 feet by 198 feet of land equals 1 acre.
440 feet by 99 feet of land equals 1 acre.
110 feet by 396 feet of land equals 1 acre.
60 feet by 726 feet of land equals 1 acre.
120 feet by 363 feet of land equals 1 acre.
240 feet by 181 1-2 feet of land equals 1 acre.
200 feet by 108 9-10 feet of land equals 1-2 acre.
100 feet by 145 2-10 feet of land equals 1-3 acre.

There are 12 city lots, 25 x 100 feet, in an acre with the street cut through; 17 424-1000 city lots, 25 x 100 feet, in an acre without the street cut through.

## MEASURES

Surface or Square Measure—144 square inches equal 1 square foot; 9 square feet 1 square yard; 30¼ square yards 1 measure 20 feet on each side and you will have about a square rod; 40 square rods 1 square rood; 4 square roods 1 acre; 640 acres 1 square mile; 4,840 square yards 1 acre.

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